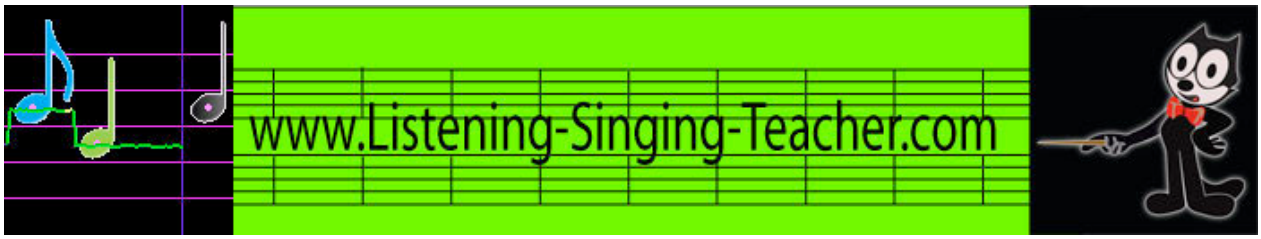Listening Singing Teacher

User's Manual

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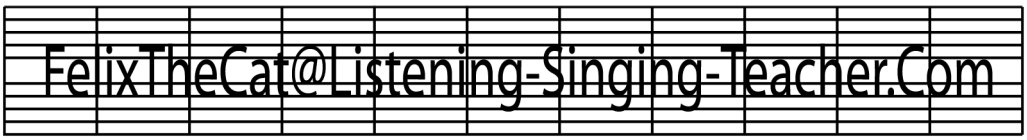
Welcome to Listening Singing Teacher (LST)

Listening Singing Teacher is a software with a simple visual approach to understanding music. Mastering music starts in the head. There is no thing nearer to your brain than your ears and your mouth. The mouth and each ear are even interconnected by an internal tube: the trumpet. That is why Listening Singing Teacher uses your voice as an instrument. The program listens to you, evaluates your achievements, and gives you visual feedback, on where you stand.

Listening Singing Teacher allows you to proceed at your own pace. Listening Singing Teacher is always ready for an exercise, never gets bored and gives non-judgmental feedback on what he has heard.

The program teaches the fundamentals of music for beginners and helps advanced users to sing on tune. It contains progressive pitch and rhythm exercises. It also introduces the most relevant music notation elements to enable you to read sheet music.

We hope you will spend many enjoying hours with Listening Singing Teacher. Your comments and inputs are most welcome: Please mail them to:

Installation Macintosh

Requirements

Before you begin, make sure that your computer is fast enough. To have a good performance a G4 with 1 GB of RAM and adequate graphic card is required. A Mac Mini G4 with 1.25 GHz and 1 GB of RAM should do it. The program is also running okay on a B&W G3 400 MHz with 768 MB RAM, an ACARD 100 with a SATA Hitachi 400 GB disk attached to it, and an ATI Radeon 9200 graphic card. You can try other configurations as well. The program was tested with Mac OS X l0.4.11, but previous versions did run with 10.3.9 and 10.4.x, so the program may still be working on those OS's.

You also must have an appropriate microphone connected to your computer. Check the relevant manuals on how to connect a microphone to your computer. A Mac Mini G4 for example does not have a microphone input, you have to use additional hardware like a computer compatible USB device capable of handling microphone inputs. Important: A line in is not the same as a microphone input. If you do not have a microphone input you may need a pre-amplifier.

Getting and unpacking the disk image

The first step is to download the compressed disk-image-file. In your browser go to www.Listening-Singing-Teacher.com and download the actual version.

Warning: The file has a whopping 85 MB, this will take about 1/4 hours on a DSL line. After the download has completed you should see an icon that looks like this:

The second step is to decompress the file. Double-click on it: the archive Utility appears.

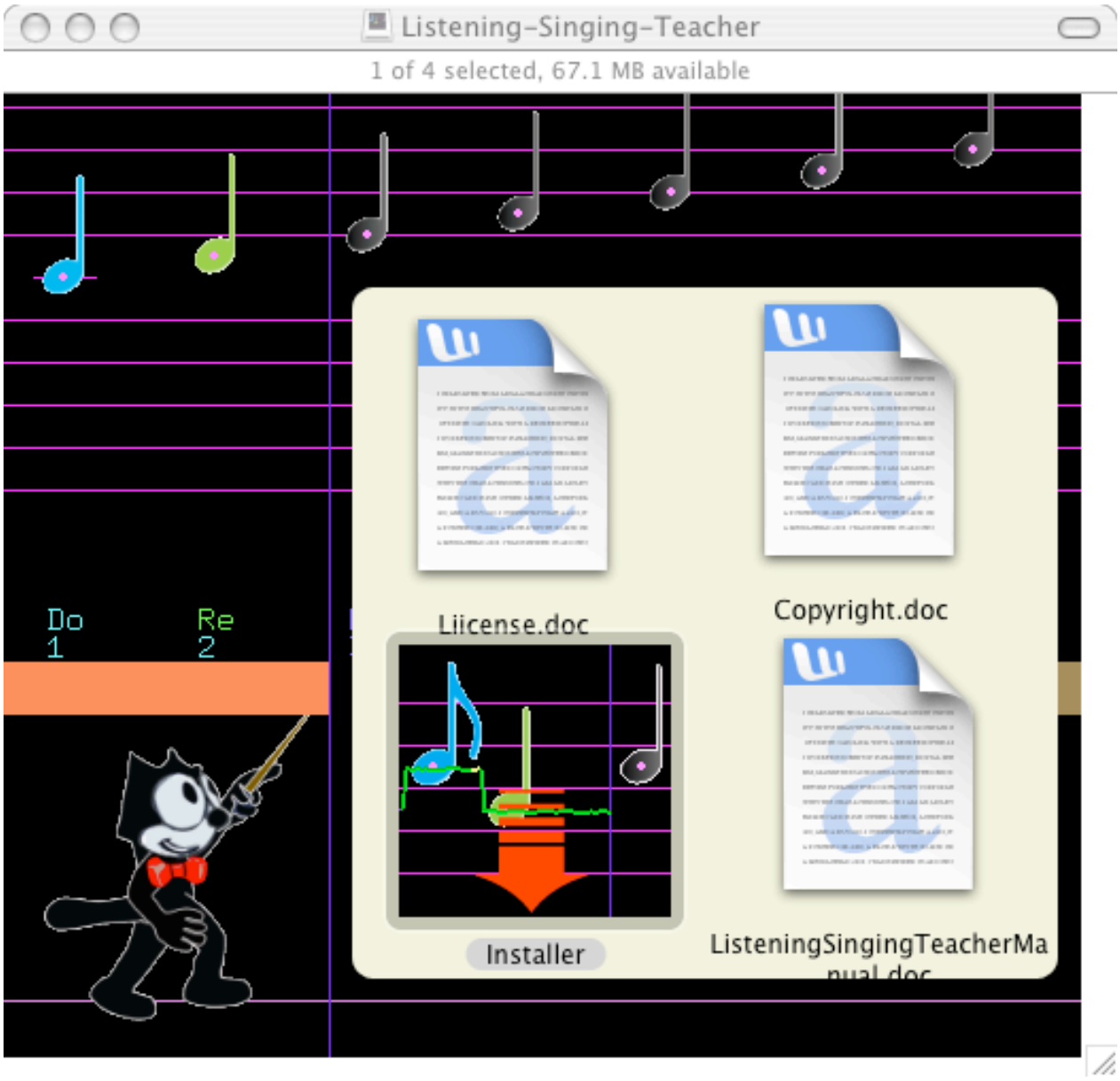
Be patient as this may take a while.

After this task finishes double-click on the new icon, which was created.

The Disk Image gets mounted. On the desktop you should see the following icon:

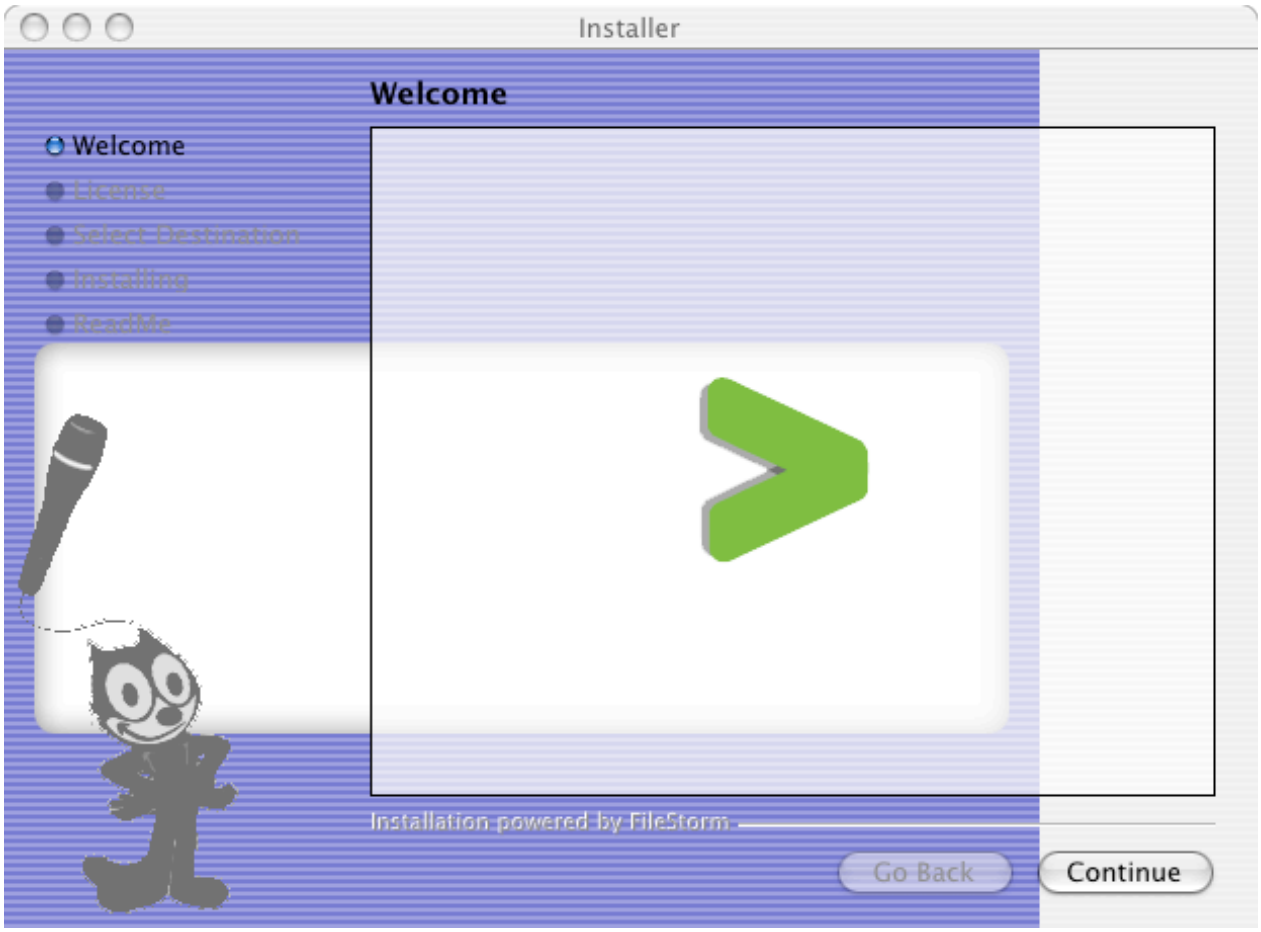
A double-click brings up the Installation window.

Installation



Reading the License Agreement and the Copyright, before installing is a good practice. During the installation you must agree to the terms anyway or discard the downloaded files.

By double-clicking the installer, the installation process starts. Before the Welcome screen appears a minute or so may elapse. The installer will guide you through the installation process.



If you used the defaults during the installation, Listening-Singing-Teacher should have been installed in your applications Folder.

Uninstalling Listening Singing Teacher

In the Finder click on Applications and drag the Icon for Listening Singing Teacher to the Trash.

Installation Windows

Requirements

Before you begin, make sure that your computer is fast enough. To have a good performance an Intel core Duo with 1 GB of RAM and adequate graphic card is required. The program was tested on Windows XP and Vista.

You also must have an appropriate microphone connected to your computer. Check the relevant manuals on how to connect a microphone to your computer. Some PC's do not have a microphone input, you have to use additional hardware like a computer compatible USB device capable of handling microphone inputs. Important: A line in is not the same as a microphone input. If you do not have a microphone input you need a pre-amplifier.

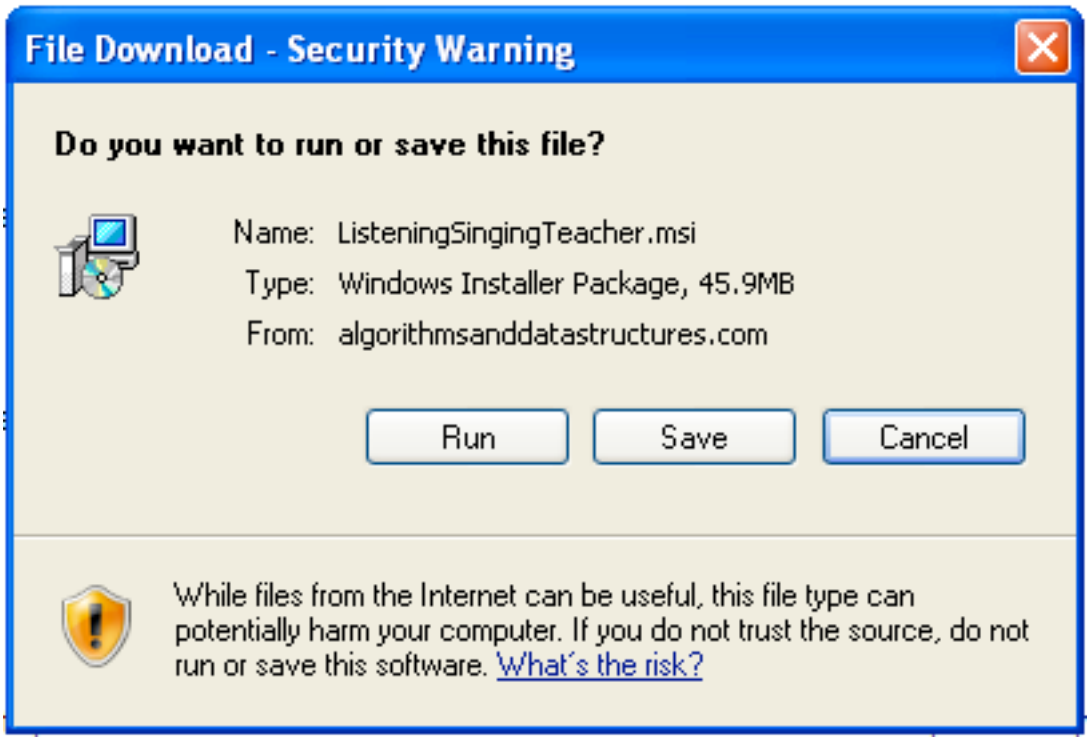
Getting the installation file

The first step is to download the compressed installation file (.msi). In your browser go to www.Listening-Singing-Teacher.com and download the actual version.

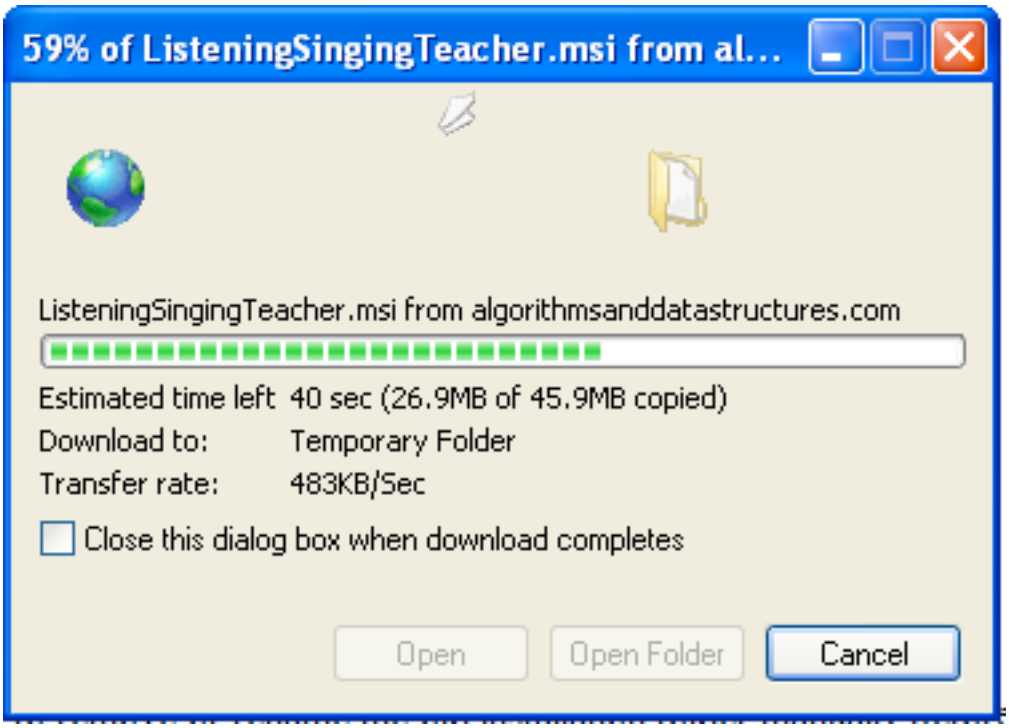
Warning: The file has a whopping 85 MB, this will take about 1/4 hours on a DSL line.

Installation

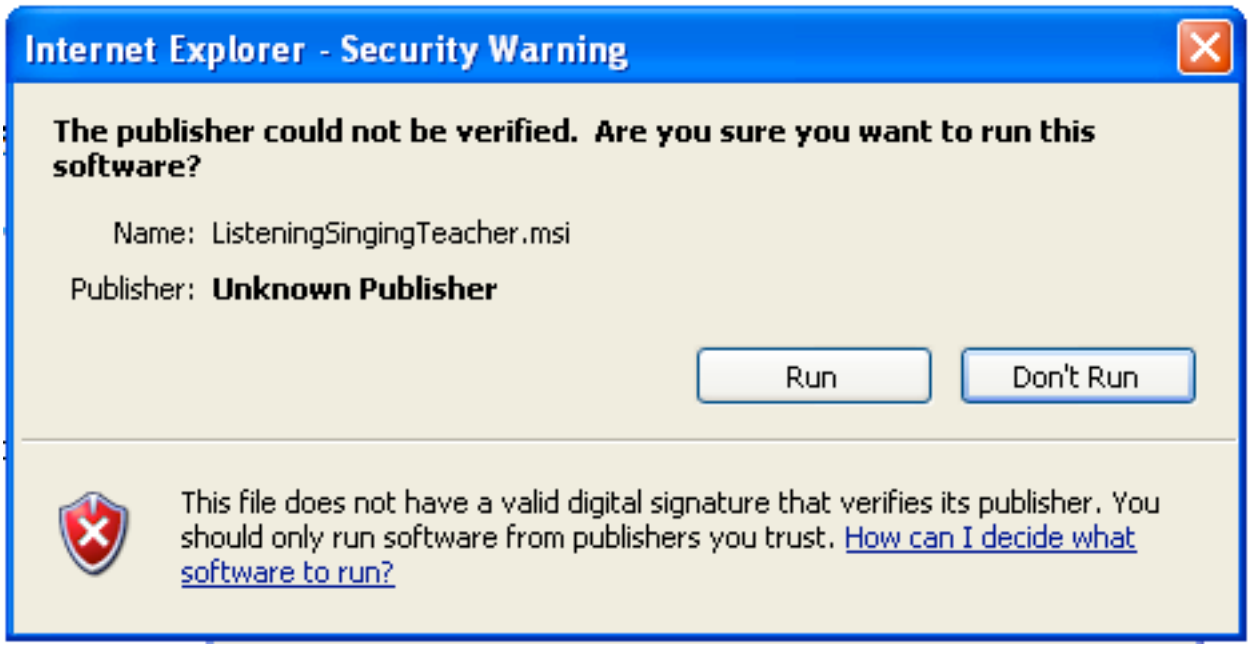
After clicking the download link the following window opens:



Click "Run". The actual download starts.

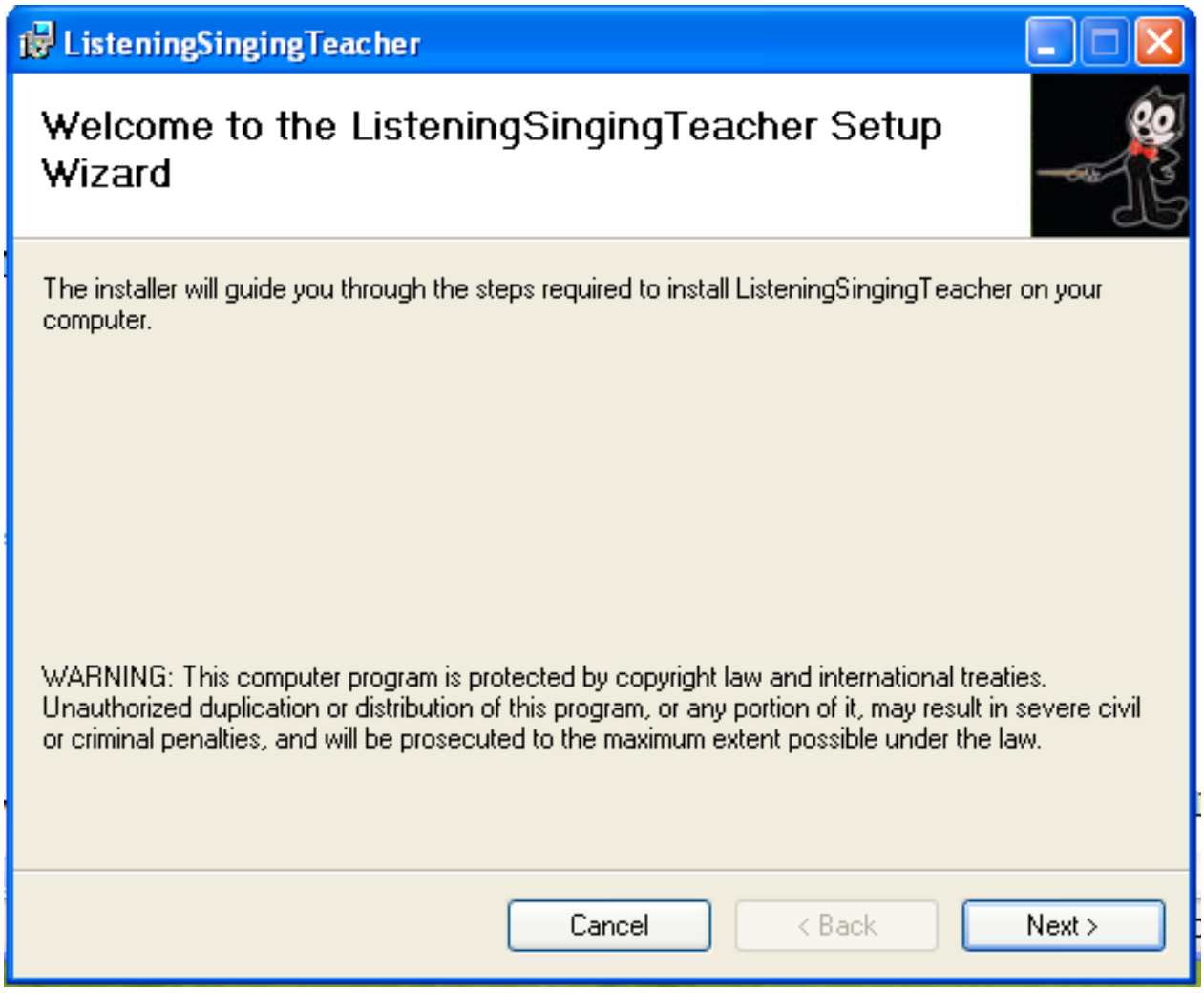


When the download finishes the following Security Warning appears:



We do not have a digital signature, yet. If you do not trust us click “Don’t Run” otherwise click “Run” to continue the installation.

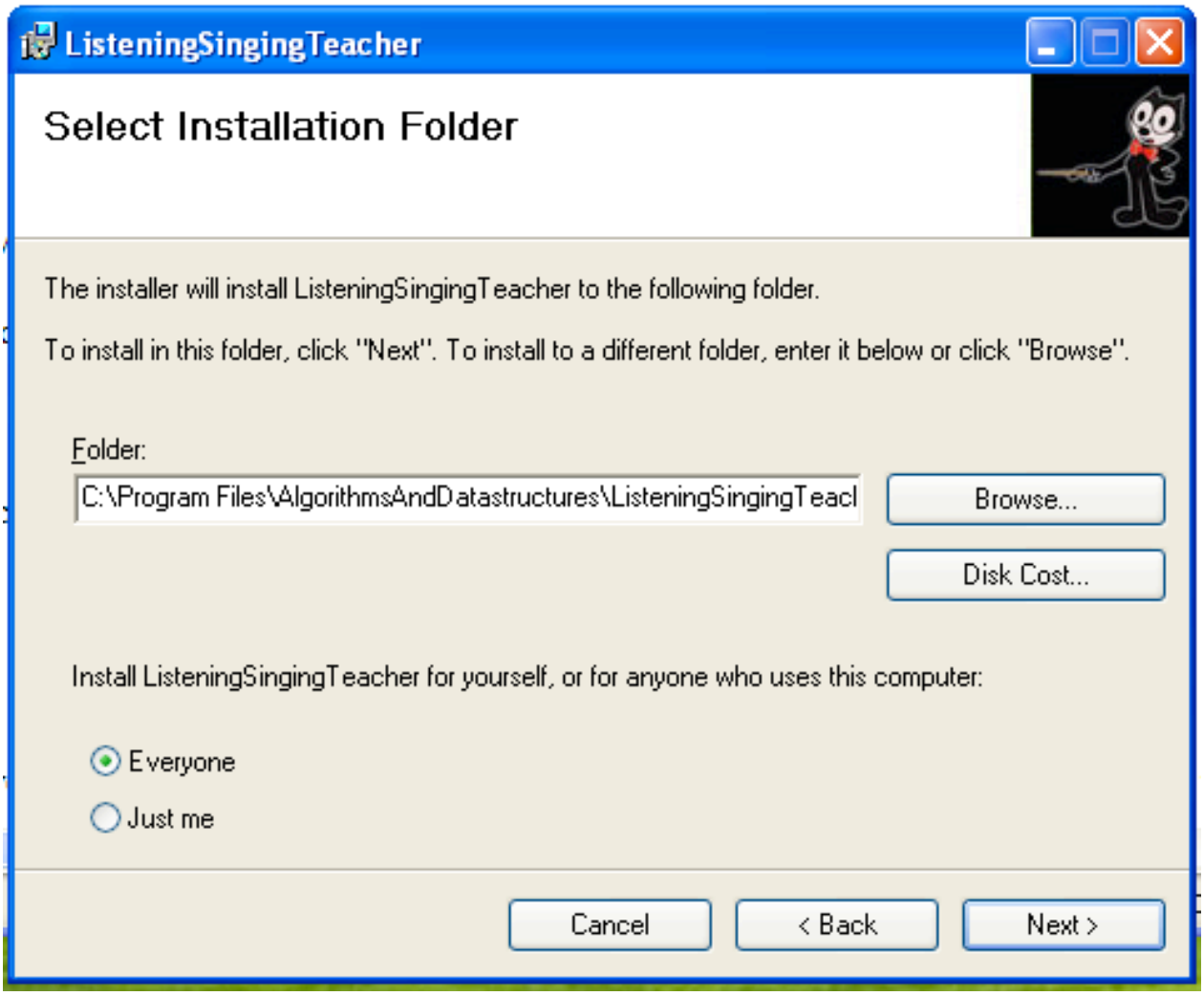
The Setup Wizard Window opens:



Click Next. The License Agreement appears.

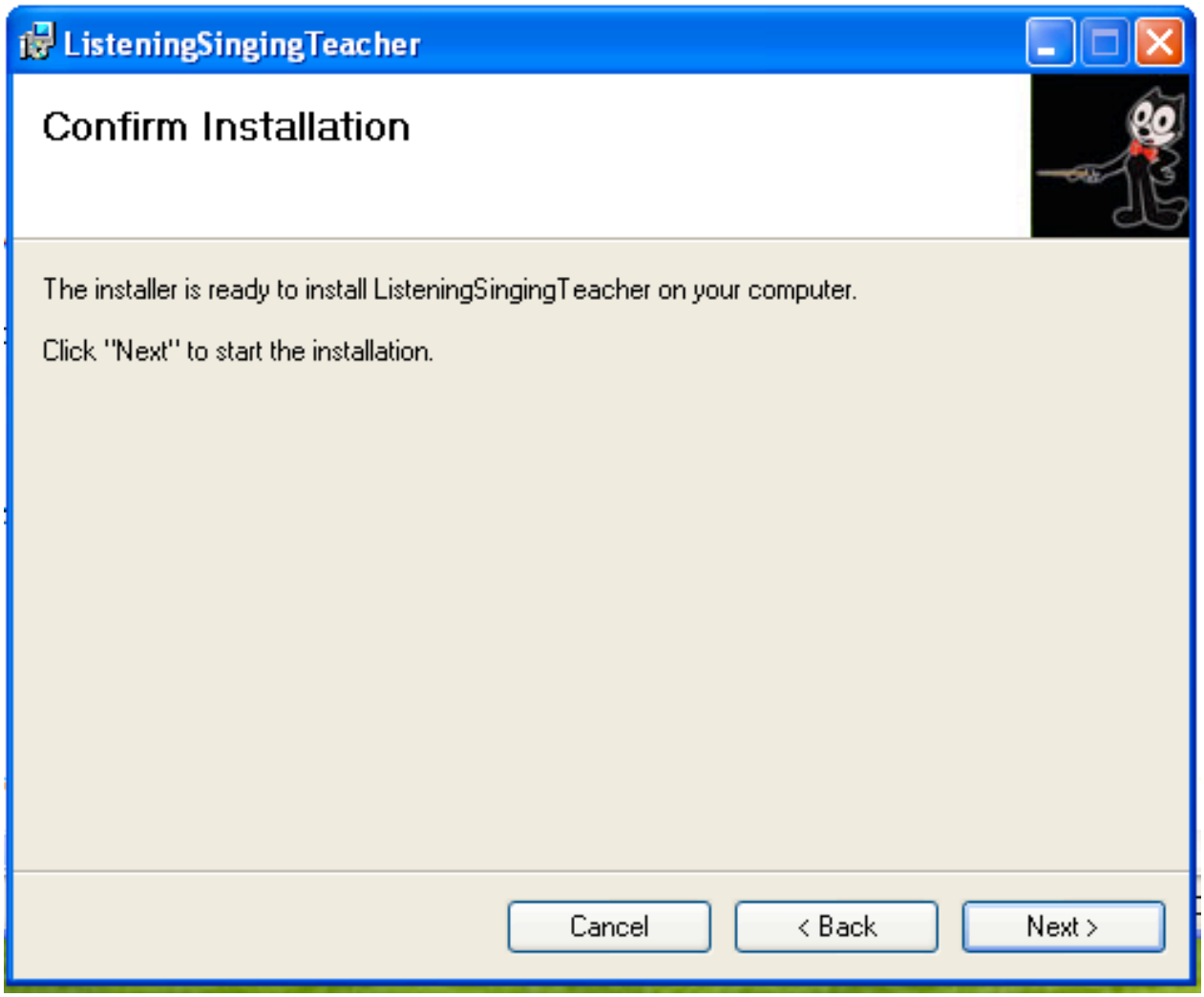
Reading the License Agreement and the Copyright, before installing is a good practice. Click “I agree” if you agree with our License Agreement.

The “Select Installation Folder” dialog appears. By default the application will be installed under C:\Program Files\AlgorithmsAndDatastructures\ListeningSingingTeacher.

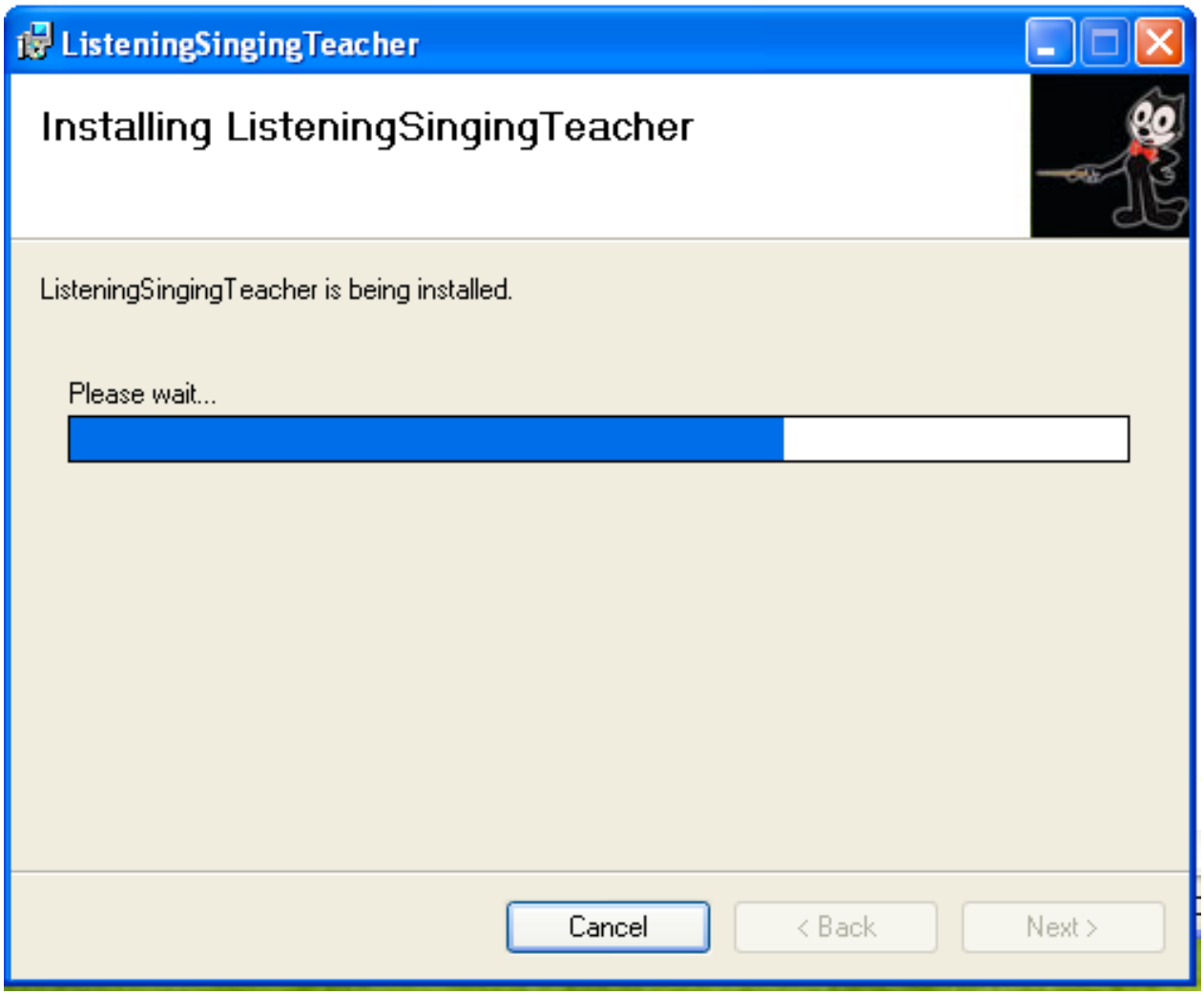


Choose your folder location and click “Everyone”, so that persons with a separate login on your computer also can run the game.

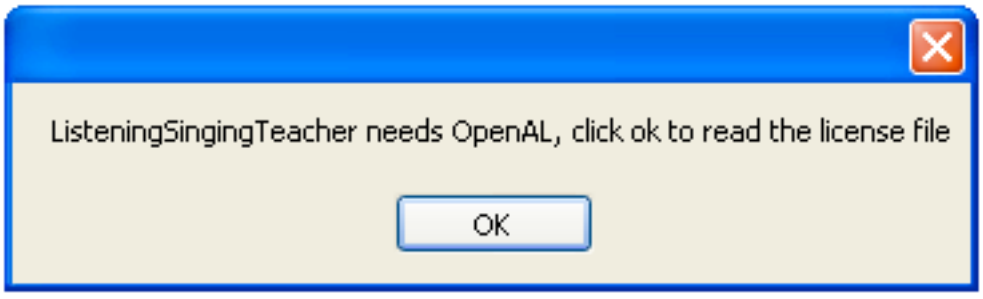
The confirmation Window appears:



Click “Next” to start the actual Installation:



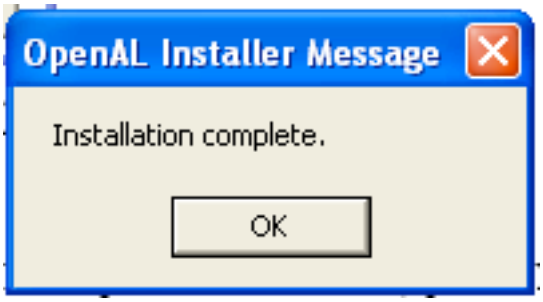
Listening Singing Teacher uses OpenAL for sound.



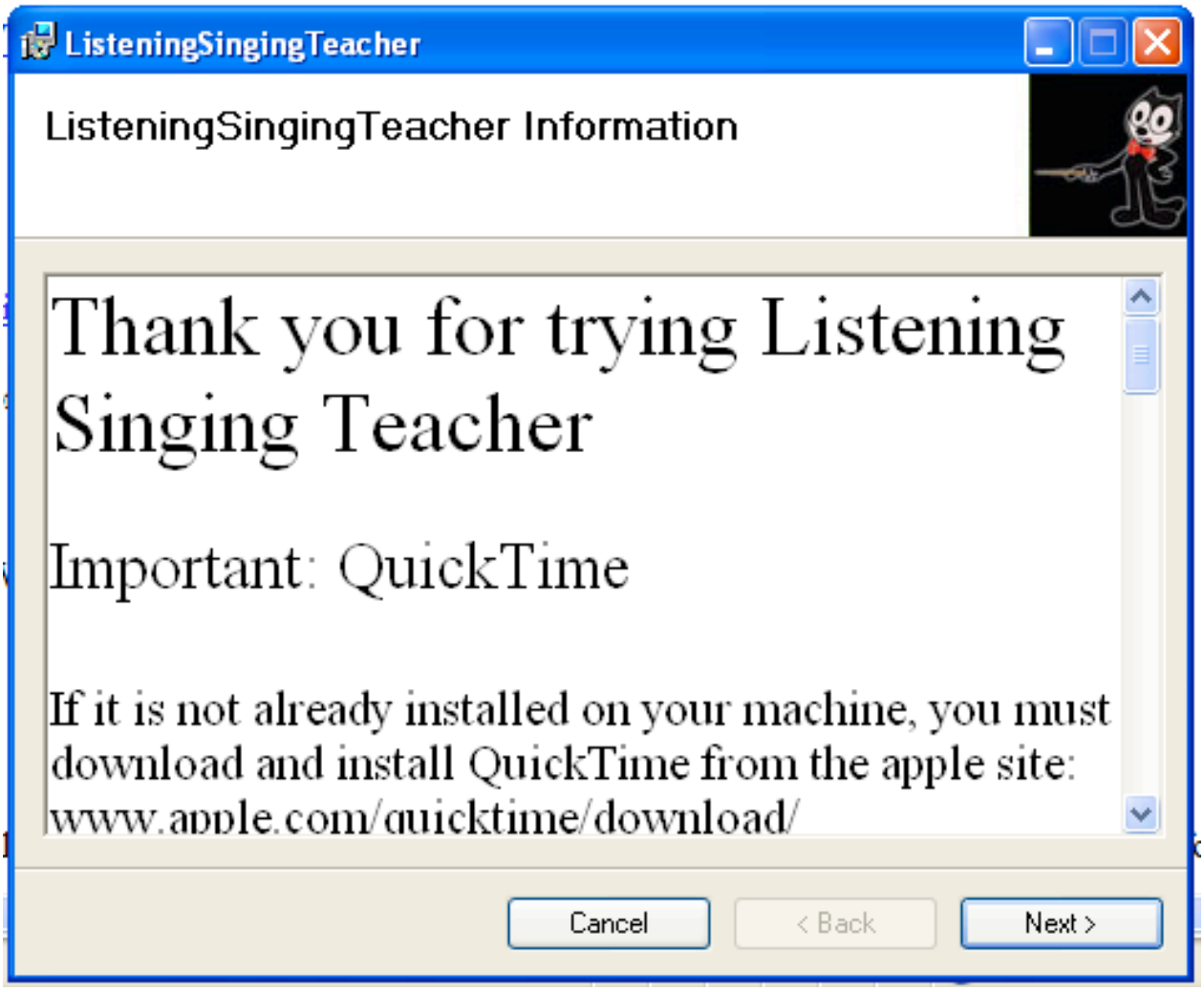
Click “Ok” and you will be presented with the OpenAL License Agreement:

Click “OK”, if you not already have installed OpenAL.

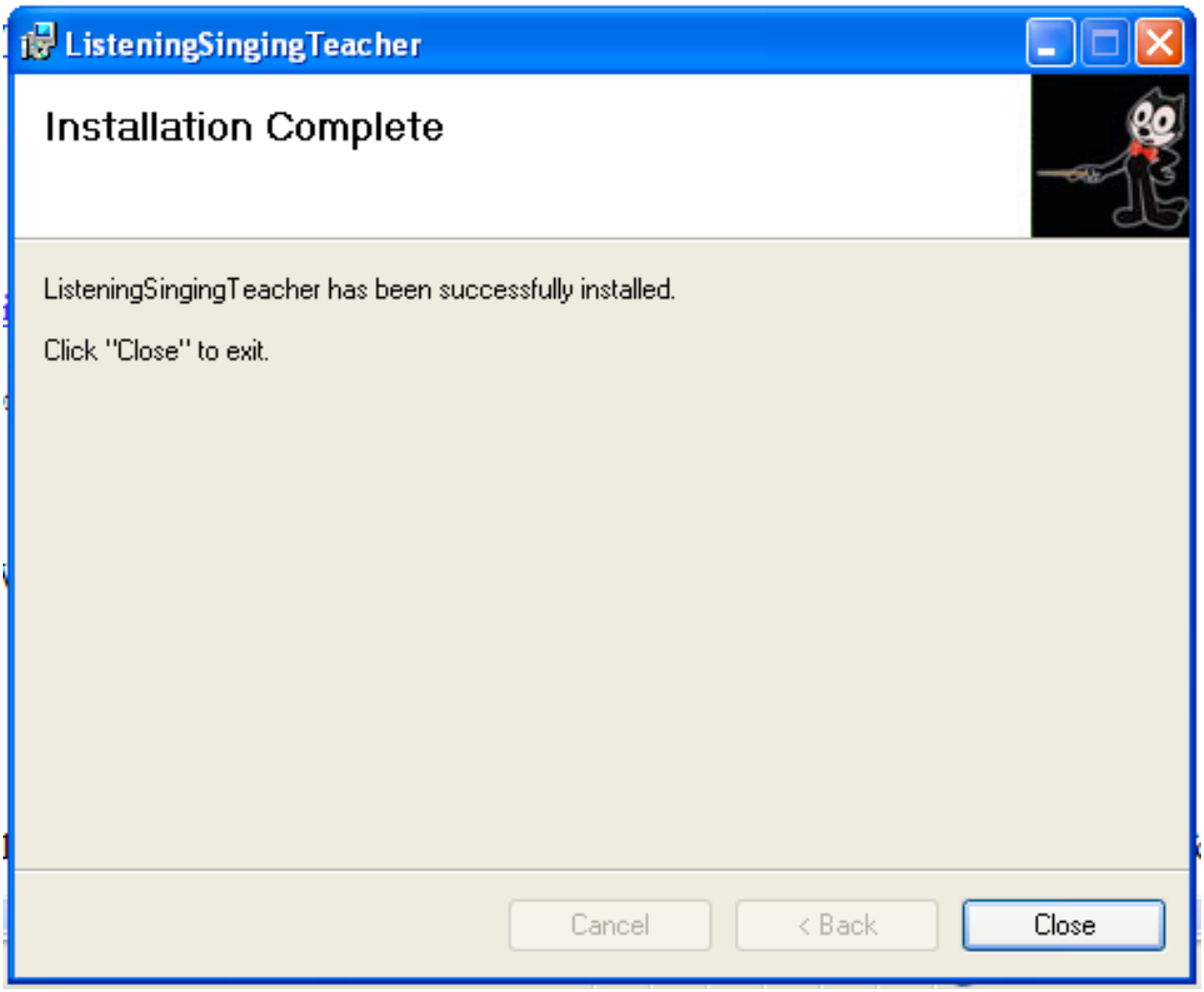
The OpenAL Installer informs you about the installation:



Finally, the installtion is finished.

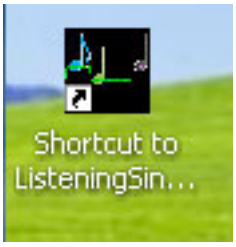


Browse through the ReadMe file, and then click “Next”.



Click “Close”.

On the Desktop you should find a Shortcut to ListeningSingingTeacher:



Uninstalling Listening Singing Teacher

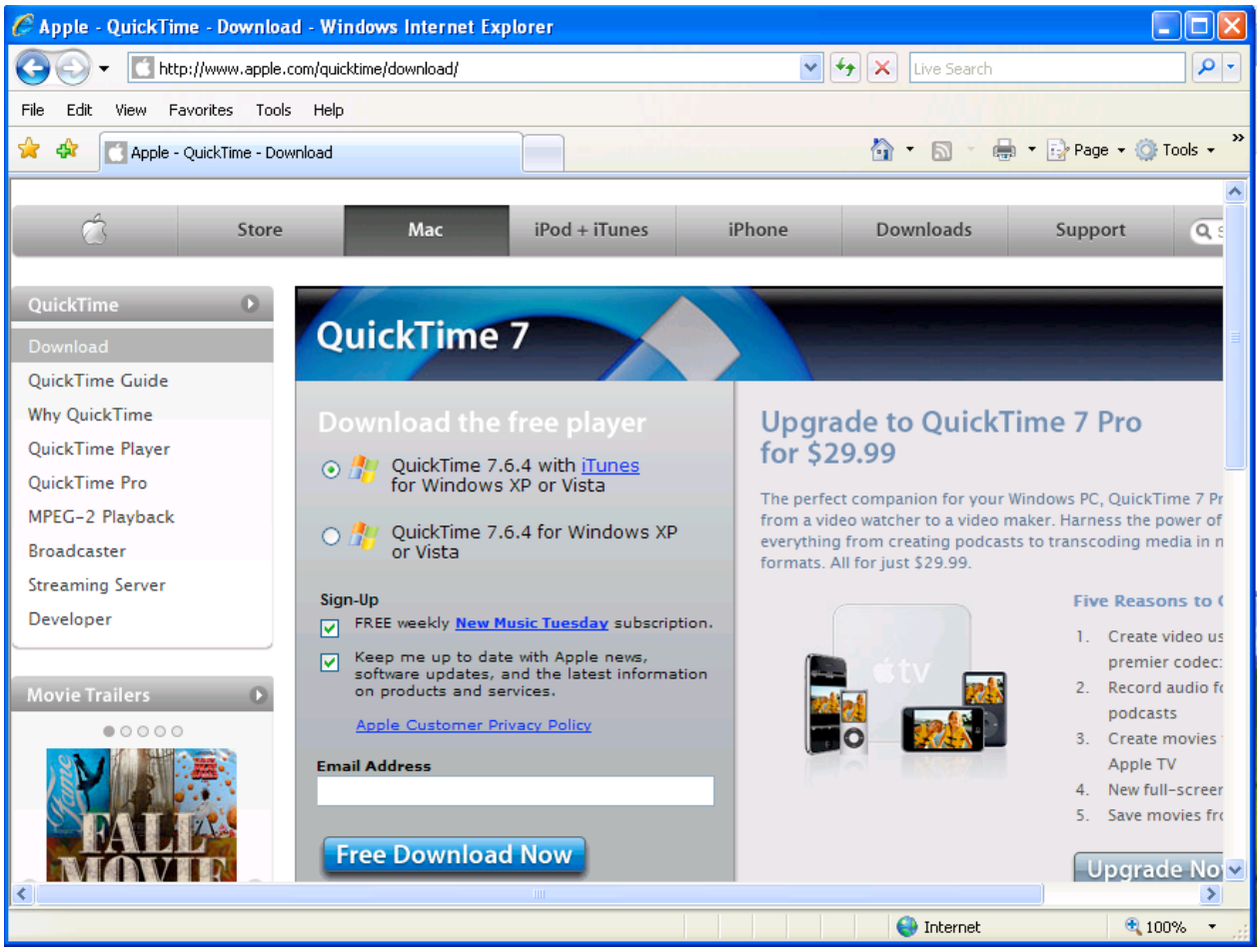
In the Finder click on Applications and drag the Icon for Listening Singing Teacher to the Trash.

Quicktime (needed for versions prior to 1.90)

This software uses QuickTime from Apple Computer, Inc. On Macintosh computers this software is pre-installed. On Windows computers QuickTime is not installed by default. If you have installed Quicktime or iTunes for some other reasons, you do not have to install QuickTime again. However it is a good practice to have the newest release.

You need Windows XP with Service Pack 2 or Windows Vista to be able to install QuickTime.

In the Internet Browser enter http://www.apple.com/quicktime/download. You should be presented with a page like this:

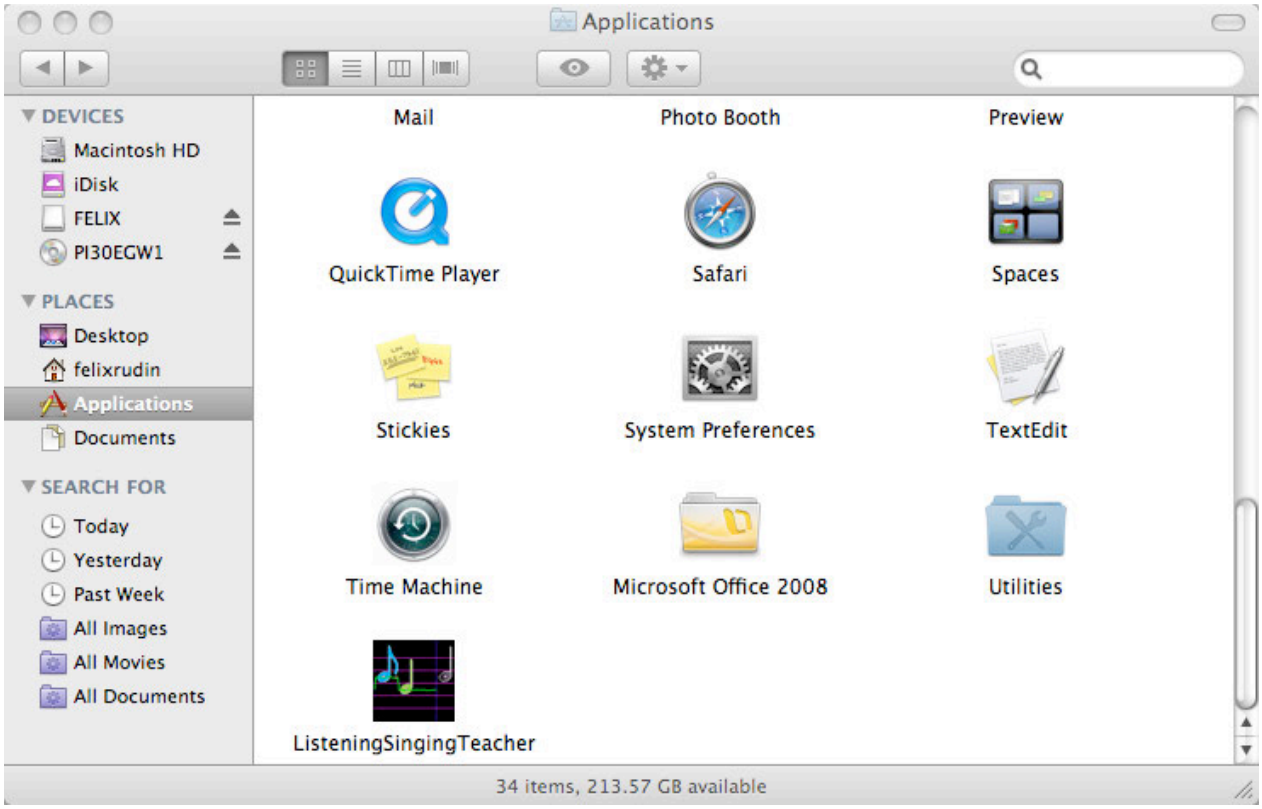


Choose if you want to insall QuickTime with iTunes or only QuickTime. Click “Free Download Now” and follow the installation instructions.

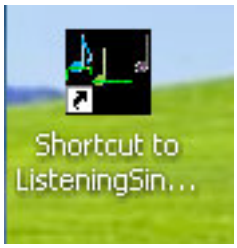
After installing Quicktime, you should be ready to use Listening Singing Teacher.

First Time Use

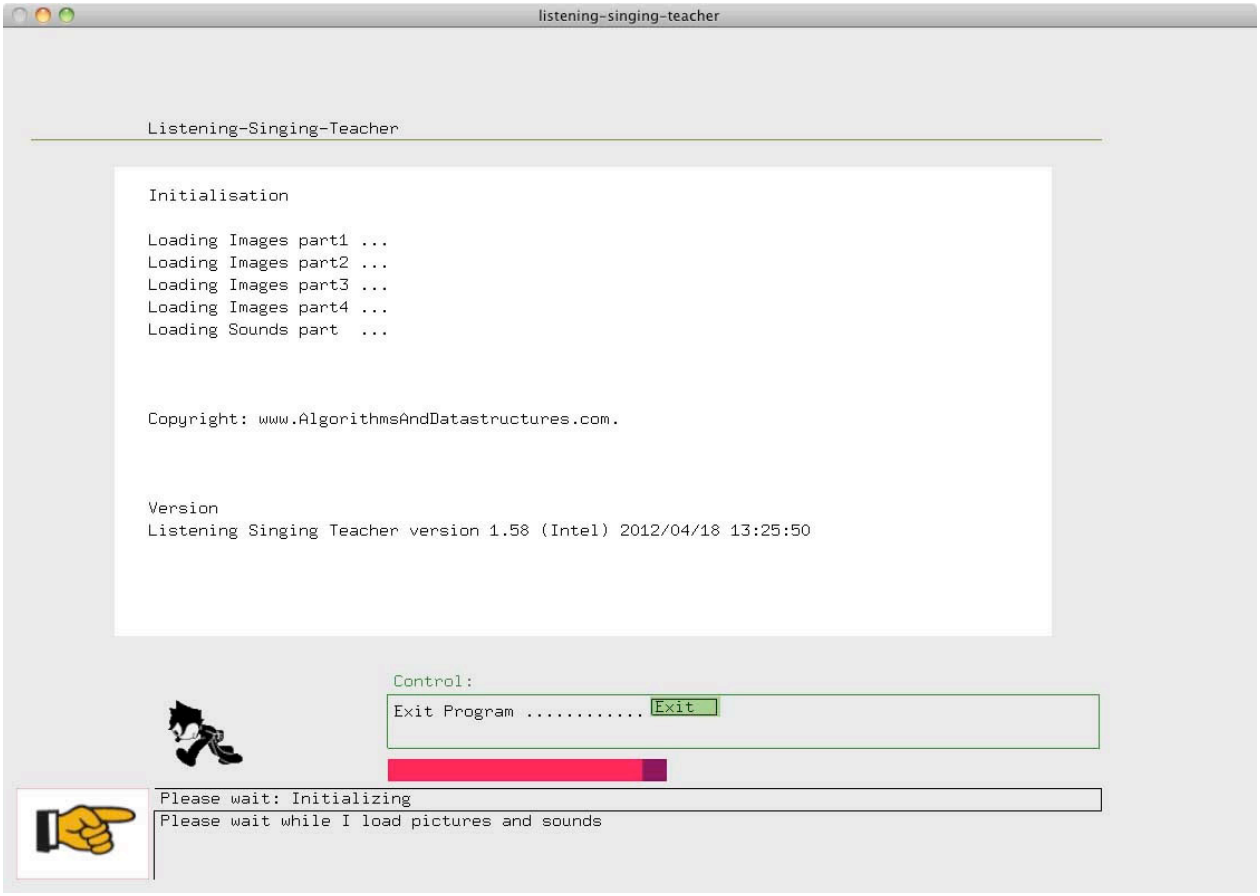
Macintosh: Double-click the application ListeningSingingTeacher in the applications folder:



Windows: Double-click the shortcut on your Desktop:



The application starts initializing by loading images and sounds.



The first time you start the application the following dialog appears:

First you must enter a User Name. The name must have at least 5 characters. The name may consist of a First and Last Name, separated by a blank or a comma. Only the American Standard Characters are allowed.

If you do not like the default Admin Password “NoPassword” change it. Please be aware that the password is case sensitive. The password must have at least 5 characters. If you forget or loose your password you must reinstall the application, in order to be able to delete users.

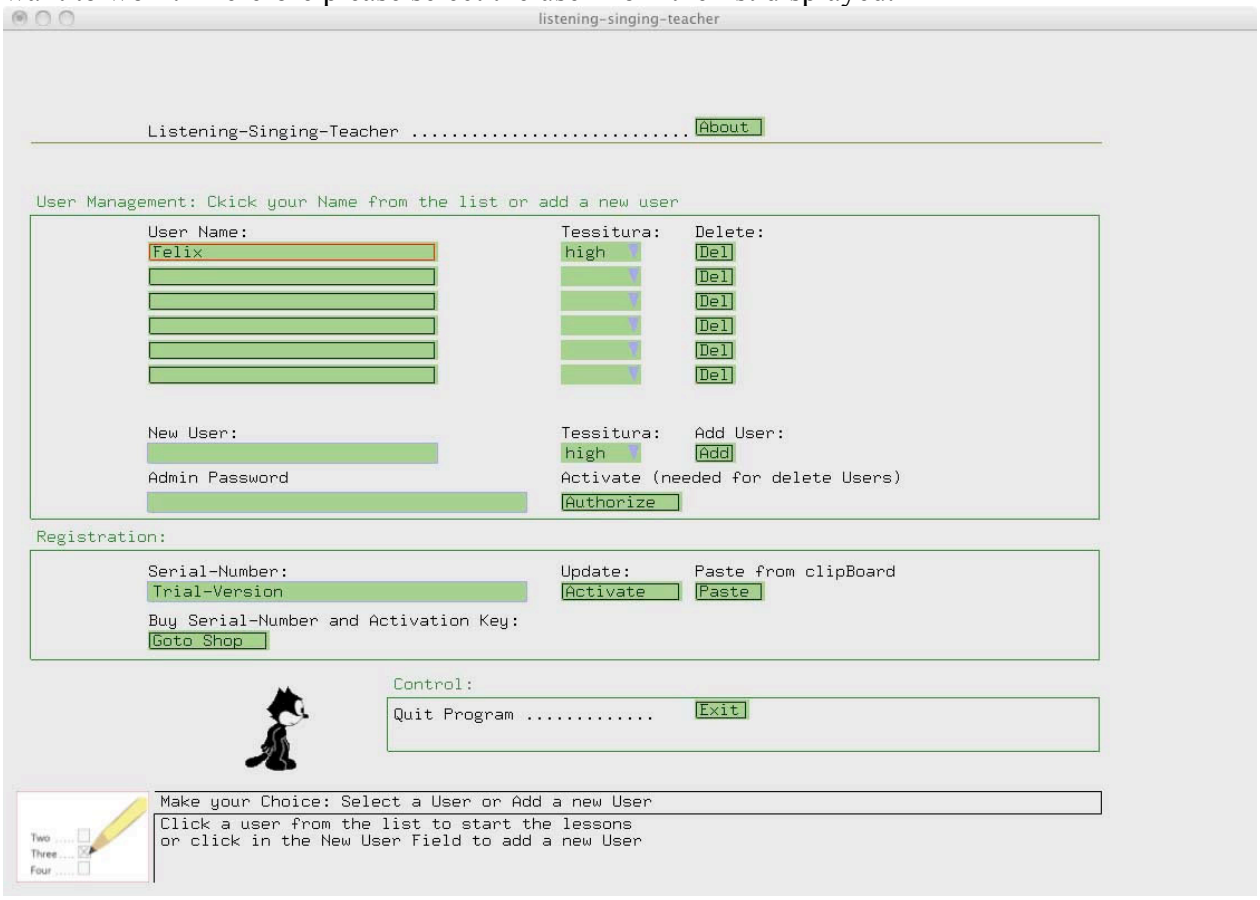
If you are done click “Go” to continue.

Clicking “Exit” will leave the program in its current state and ask you again for the name when started.

Select User

-

In order to collect statistics for a particular user, the program must know with which user you want to work. Therefore please select the user from the list displayed.



If you are not on the list you may add your name to the list by clicking in the New User field and typing your name. Select a tessitura, see next paragraph, and click “Add”. Your name should now appear and you can select it.

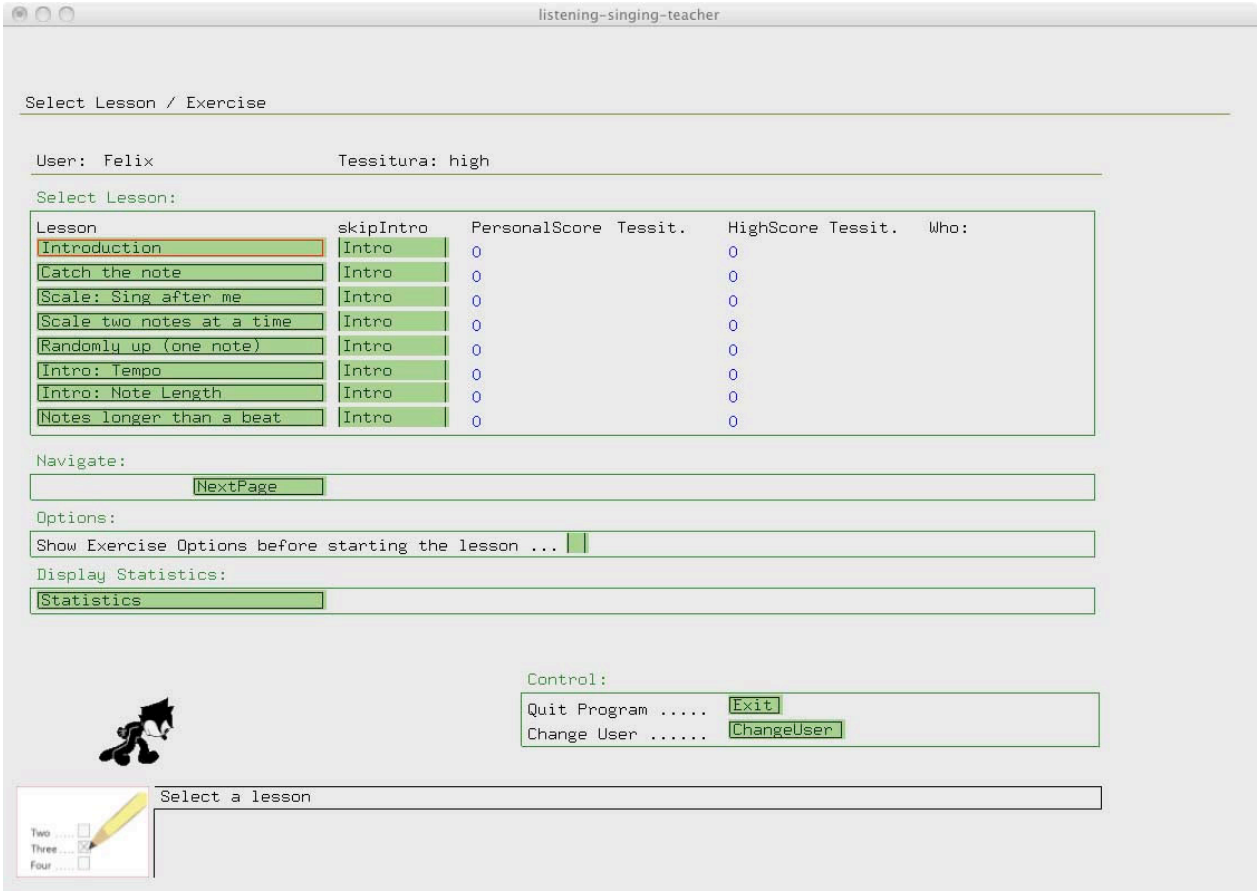
To adjust the exercises to the users pitch, the user must select a pitch range, a so-called tessitura. High means soprano, medium means baritone and low means bass. You can change the tessitura anytime, by going back to this dialog. It has no effect on the recognition; it only displays the notes in a range, which is hopefully suitable for your voice. If you your voice spawns a big range (3 Octaves or more) you may go through the exercises in all tessitura modes.

If you want to delete a user, you must enter the Admin Password and click “Authorize”. Then click the “Del” Button next to the particular user you want to delete.

The registration process is explained in the last chapter.
For now, just select your desired tessitura and then click your name.

Select Lesson/Exercise

After selecting your name, the Select Lesson dialog will be presented:



In the Select Lesson frame you select the desired lesson/exercise. To the right of the lesson/exercise buttons you find another button, which allows you to skip the explanations given for a particular lesson/exercise. Clicking a button in the column SkipIntro will change the button to read, “Skip”, or if it is already on “Skip” it will be reset to “Intro”.

Next to the “SkipIntro” buttons you see your personal high score and tessitura in which you reached that score for this lesson. The scores are colored as follows:

- blue: You reached less than one third of the possible points
- green: You reached the basic level
- yellow: You reached more then two thirds of the possible points
- red: You have more then 90 % correct answers
-

As an additional encouragement, the highest score of competing players is included to the right.

In the navigation frame you find the “PreviousPage” and “NextPage” buttons, which allow you to page through the lessons/exercises.

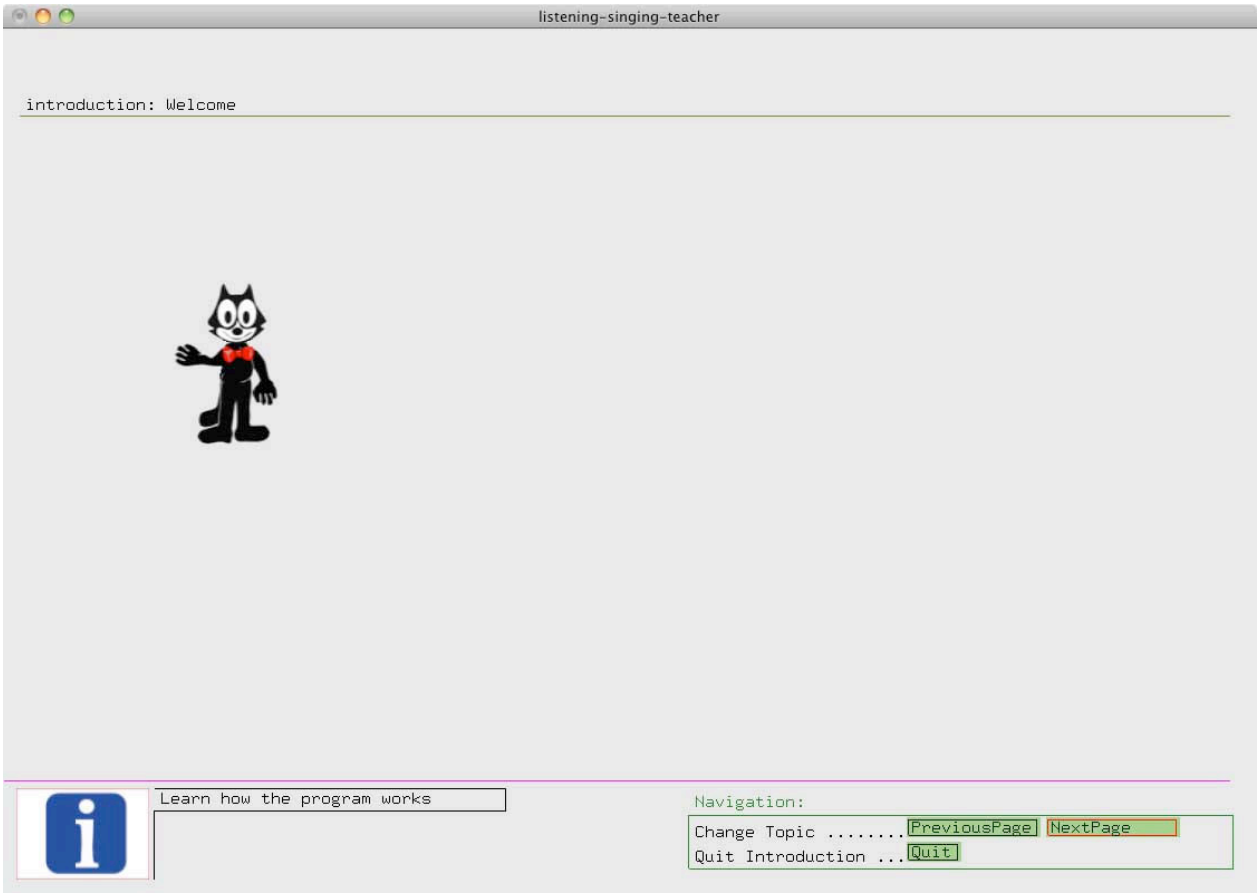
Clicking on the “Statistics” button will bring you to the Statistics Section, which is explained in a following chapter Statistics.

The first lesson entitled ”Introduction” is different from all the following ones. The next chapter presents the introduction lesson.

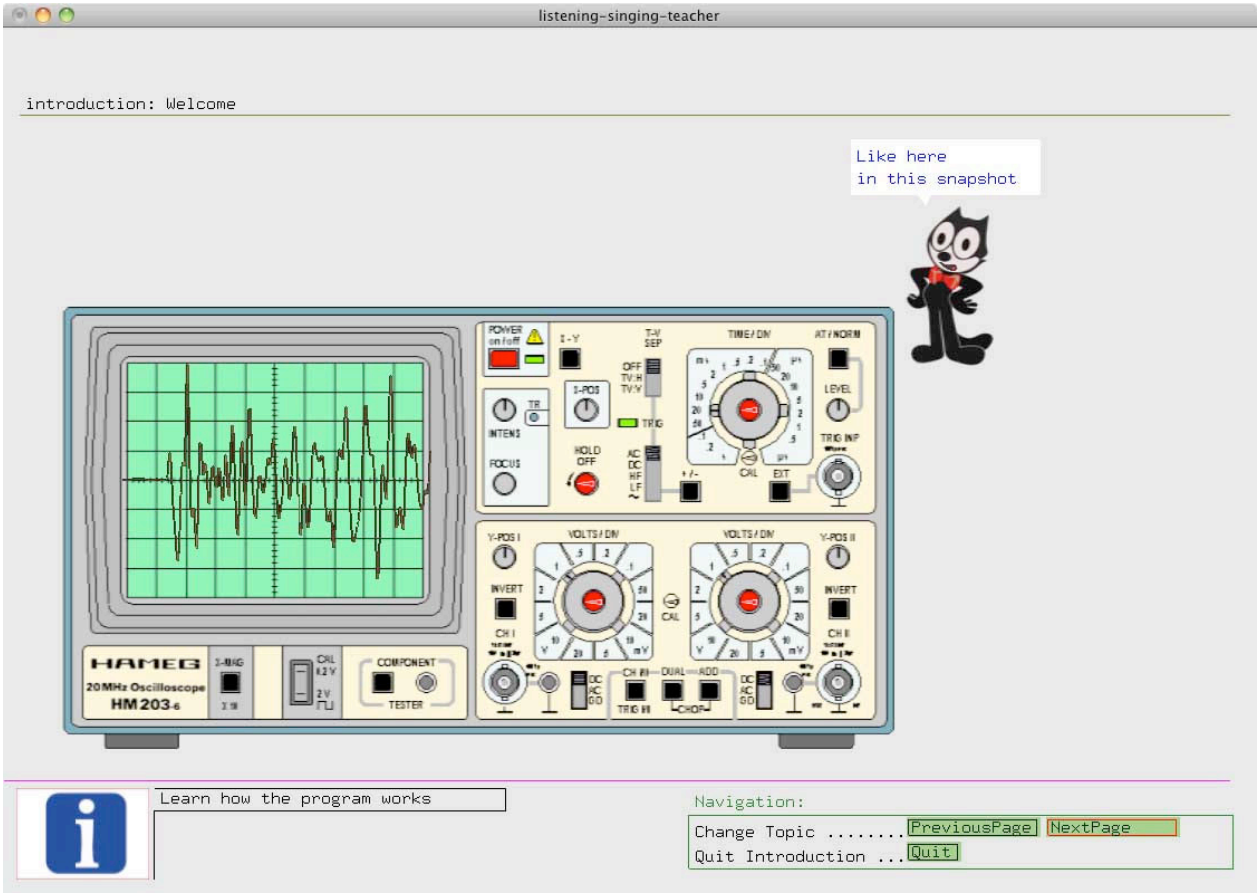
All other lesson choices will lead to the “Exercise Option” Dialog, which is explained later on in the chapter Exercise Options.

Introduction

The introduction lesson is the only animated one and explains you how the program works.



After the welcome screen a microphone check is done. A simulated oscilloscope will show the waveform received from the microphone.



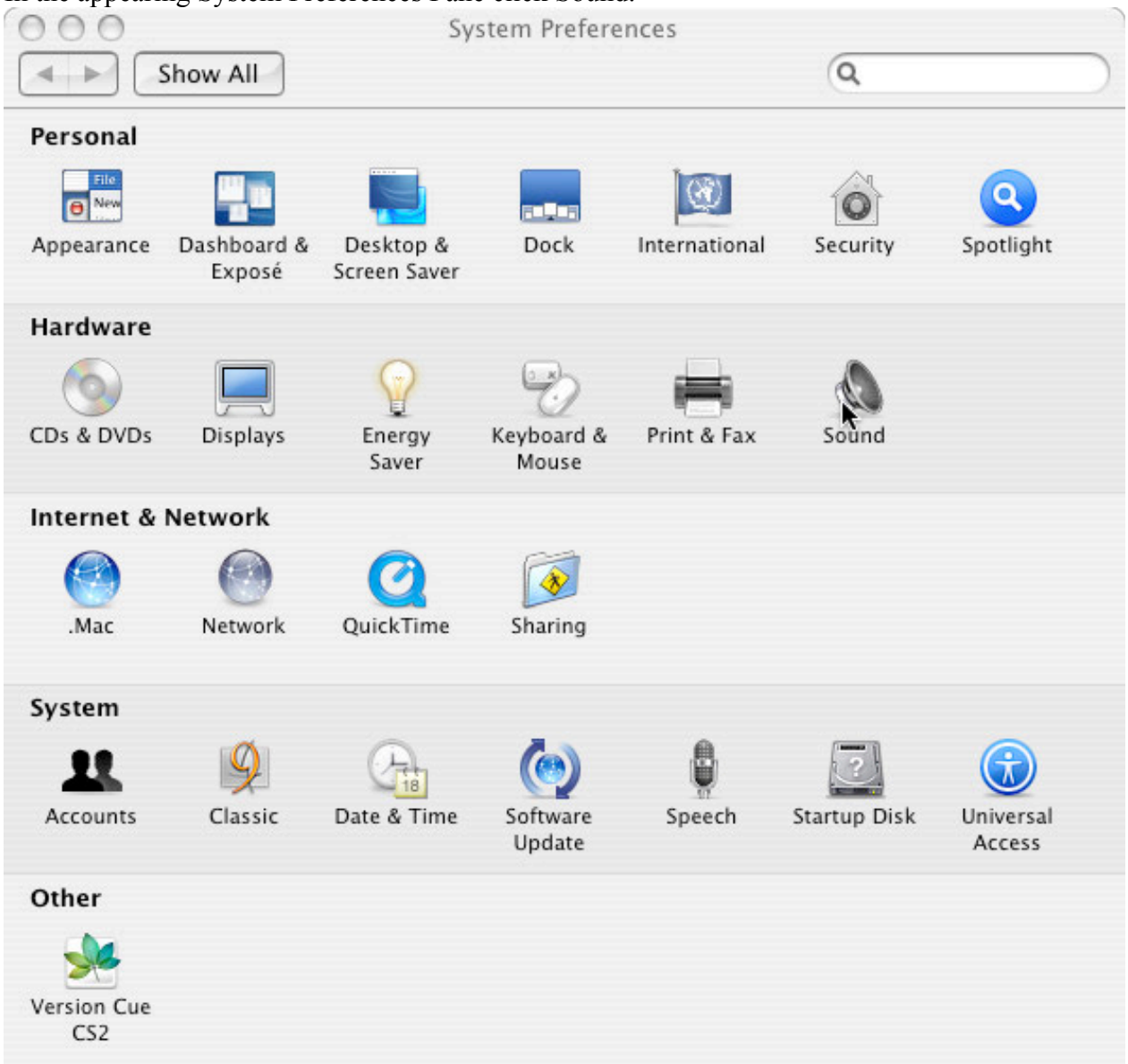
You have to make some loud enough noise so that the program can continue.

If you do not get an adequate level, read the following problem solving sections. Otherwise you can skip the next paragraph and go directly to “Continue after the microphone test”.

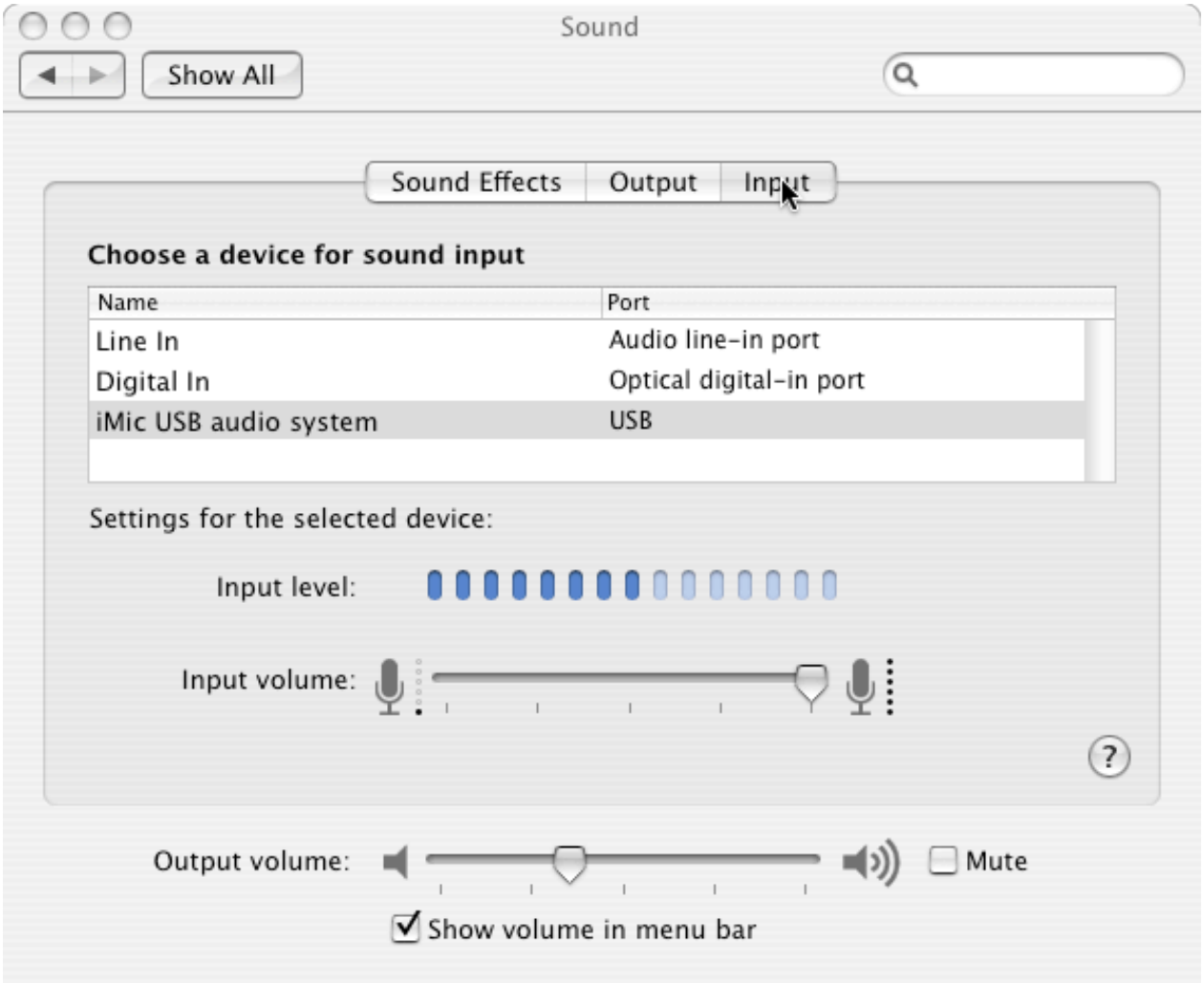
Problem solving Macintosh

If you do not get something displayed on the scope, then check with the system preferences. In the Dock click the System Preferences.

In the appearing System Preferences Pane click Sound.



On the sound dialog box click Input.



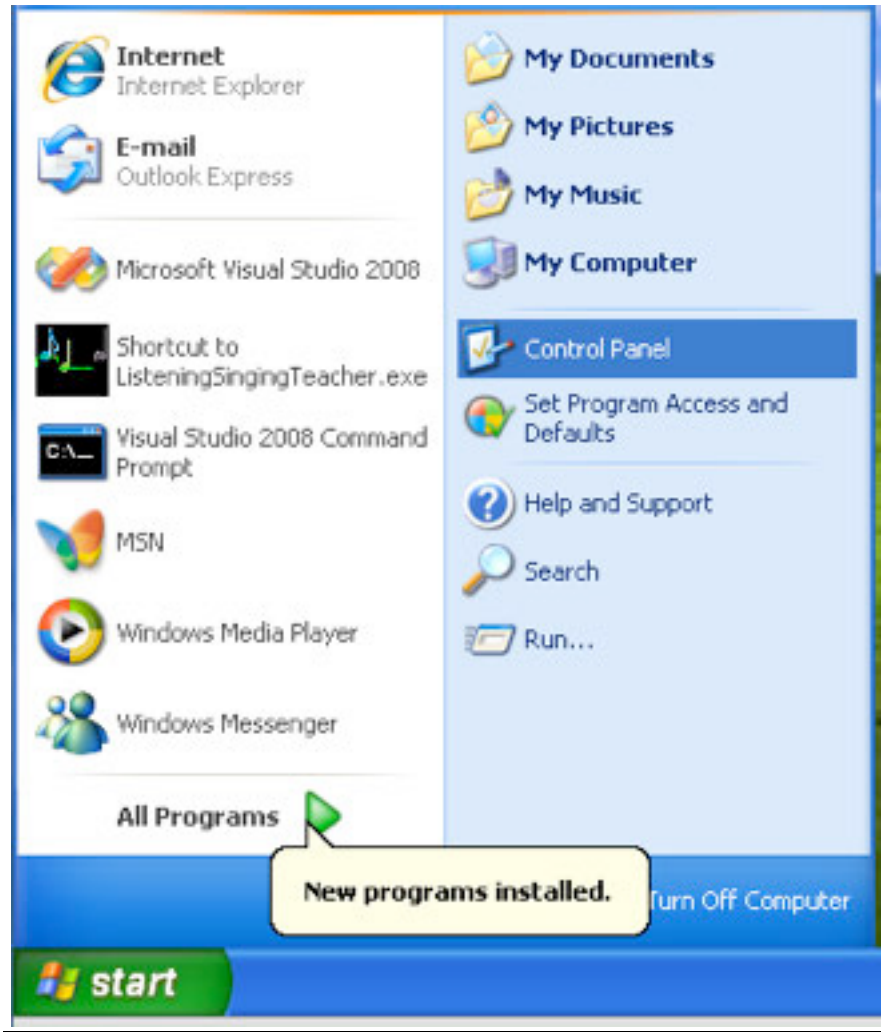
Verify that you have the correct sound input device selected. Depending on your hardware this may be different than here.

Check that the volume slider is in an appropriate position. The input level should vary between zero and the maximum, when you speak normally. If you observe a continuous high level, you should drag the slider “Input volume” to the left. If you cannot reach the maximum easily you should drag the slider to the right.

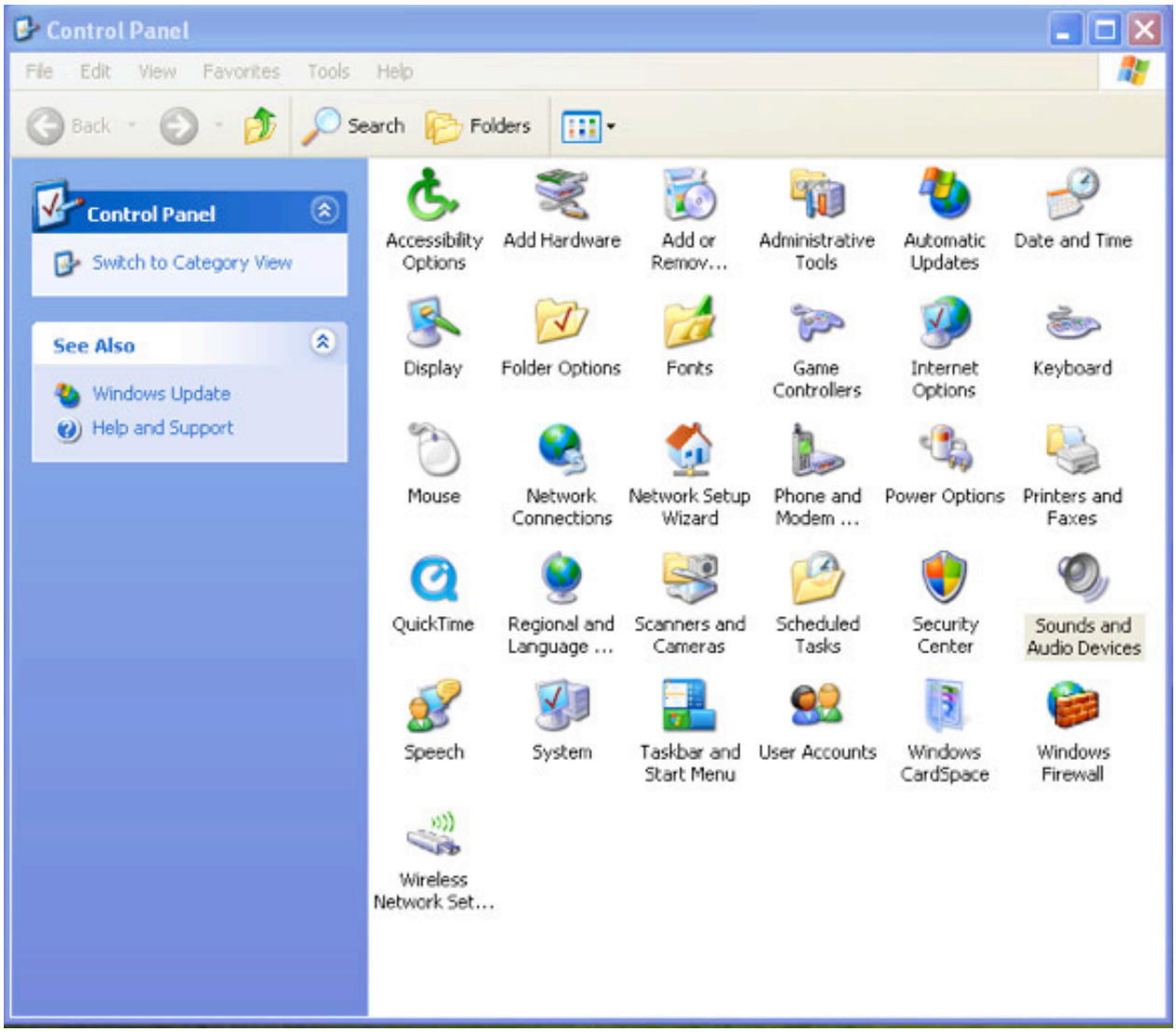
If the slider is already on the left and you do not get adequate signal strength, your microphone is probably not suited for this computer or input device. Expensive microphones tend to require special preamplifiers. Check your manuals for the microphone and the input requirements of your computer device. Never plug a loudspeaker outlet (or other amplified outlet) into a microphone input, since this may destroy the involved devices.

Problem Solving Windows

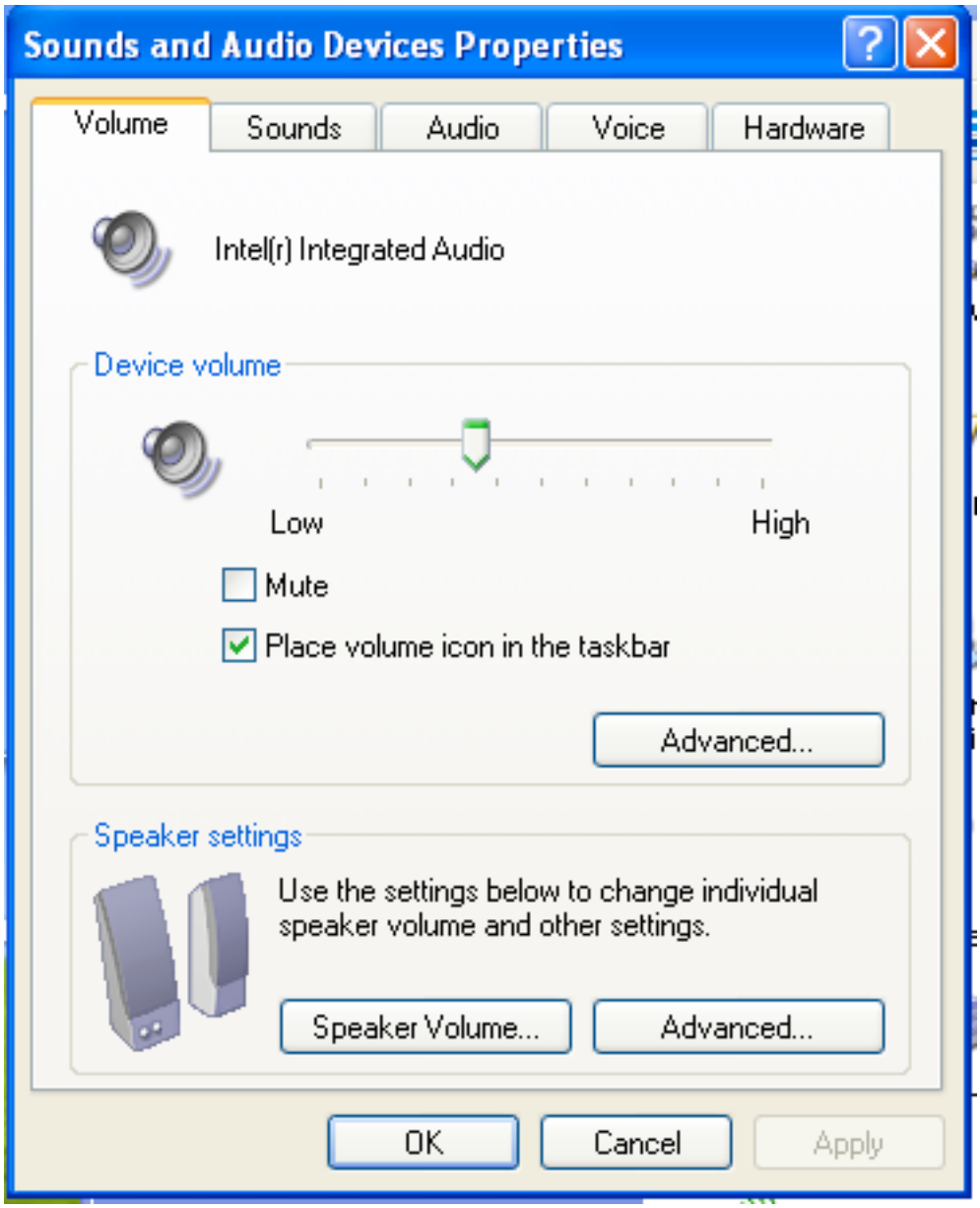
If you do not get something displayed on the scope, then check with the control panel. Click Start and Control Panel.



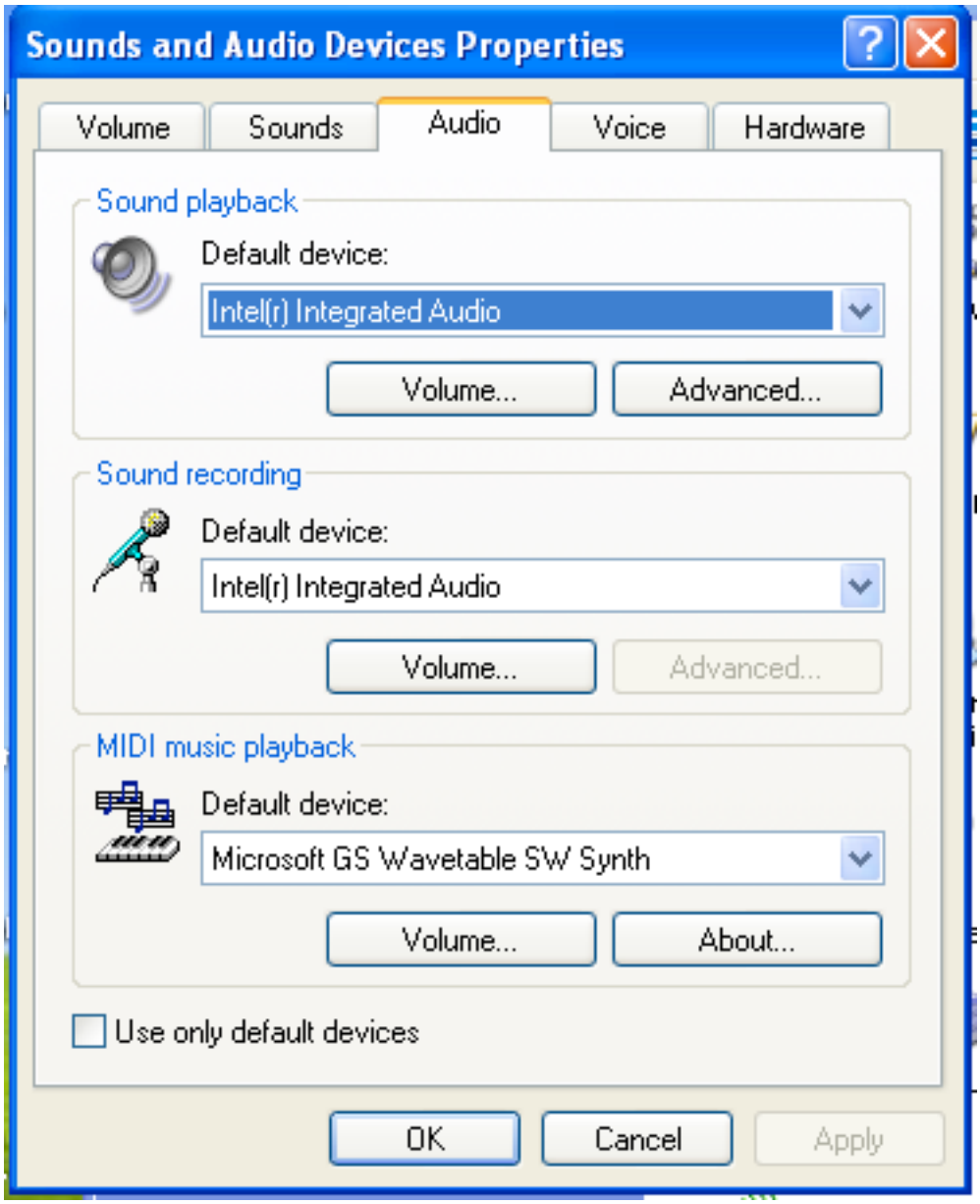
In the Control Panel Click “Sounds and Audio Devices”:



The Devide Property Windows appears:

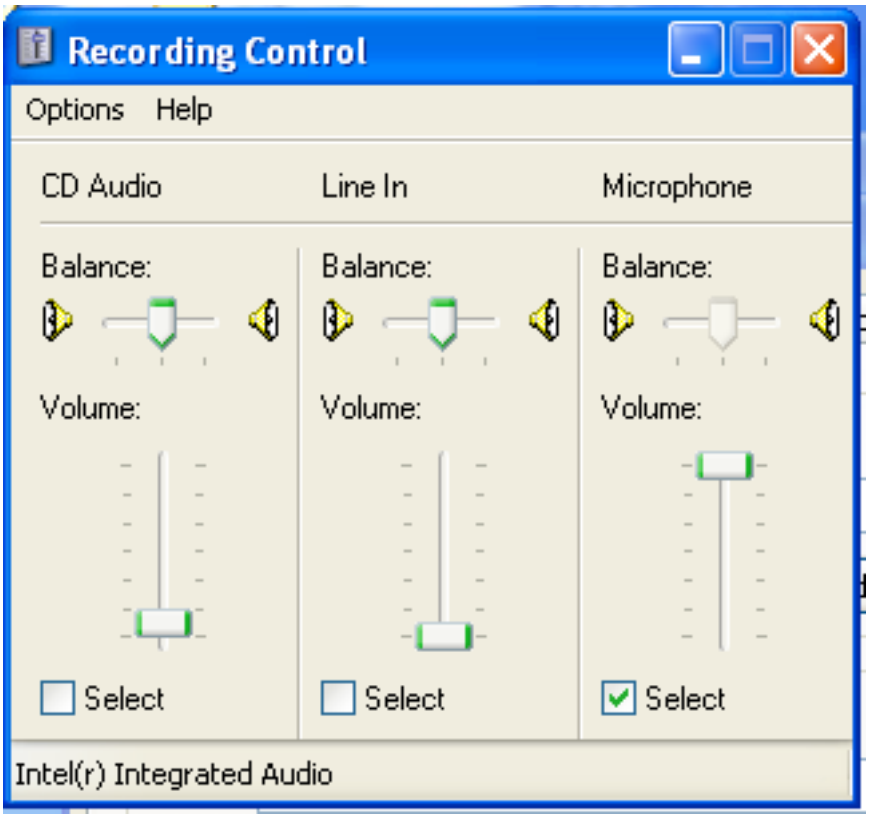


Select the Audio Tab:



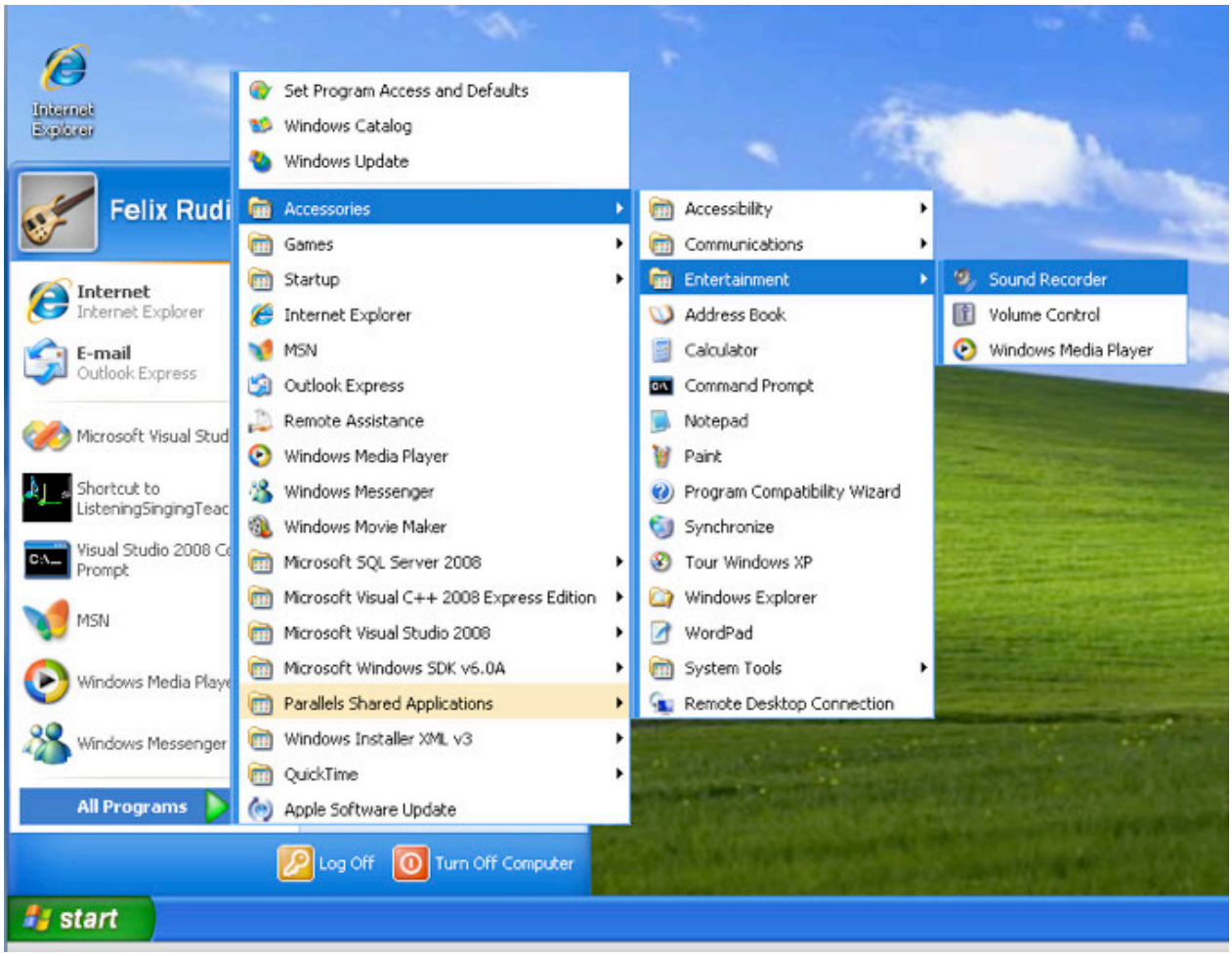
If you have several Sound recording devices, choose the device where your microphone is connected as the default device.

Click “Volume”. The following window appears:



Select only the Microphone channel and set the volume to high. This might be too high. To check the volume and the quality of th recording possibilities start the “Sound Recorder”. Keep the “Recording Control” window open, so that you can adjust the volume in the Sound Recorder.

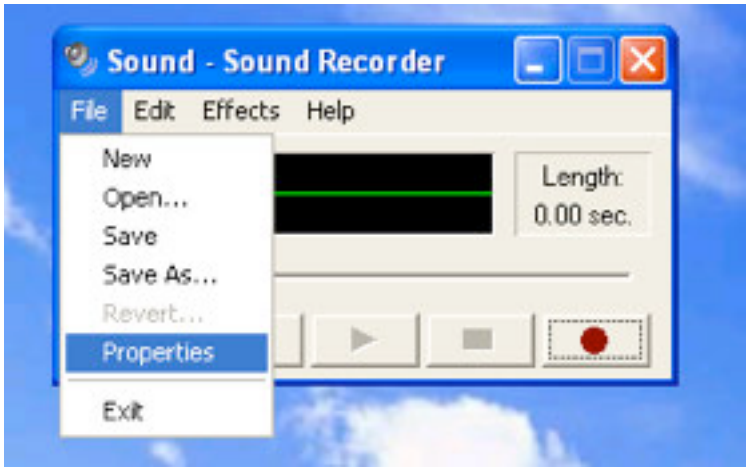
Click On “Start” --> “All Programs” --> “Accessories” --> “Entertainment” --> “Sound Recorder”:



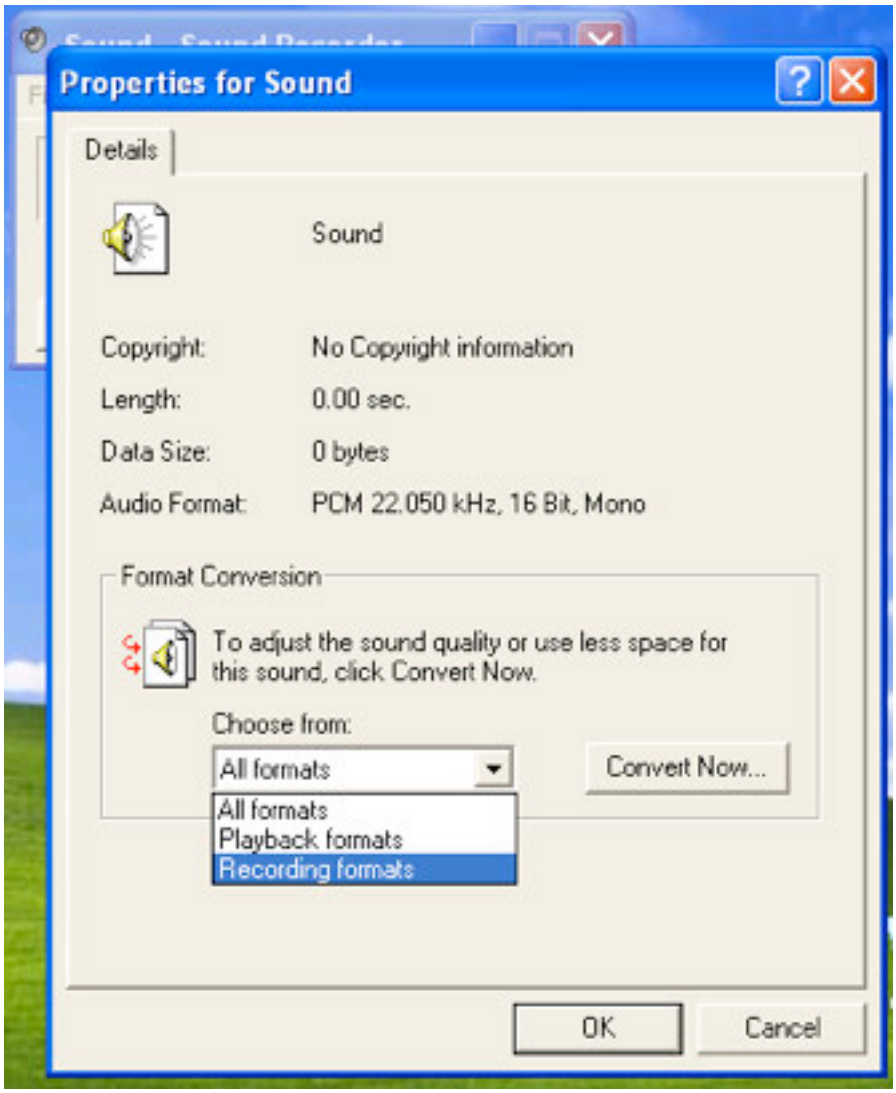
The “Sound Recorder” window appears.

Click the red Recording button and speak with normal loudness. Observe the green wave, the green line should go up to the maximum, but should not clip on the top or bottom. Adjust the volume slider in the “Recording Control” window appropriately. When this is the case you have set the volume correctly. If you cannot reach the maximum without shouting, then your microphone may not be suited for your microphone in jack. High quality microphones usually need a special pre-amplifier. Listening Singing Teacher does not recommend using microphones with which you have problems getting an adequate input level easily. Shouting is not Singing!!!

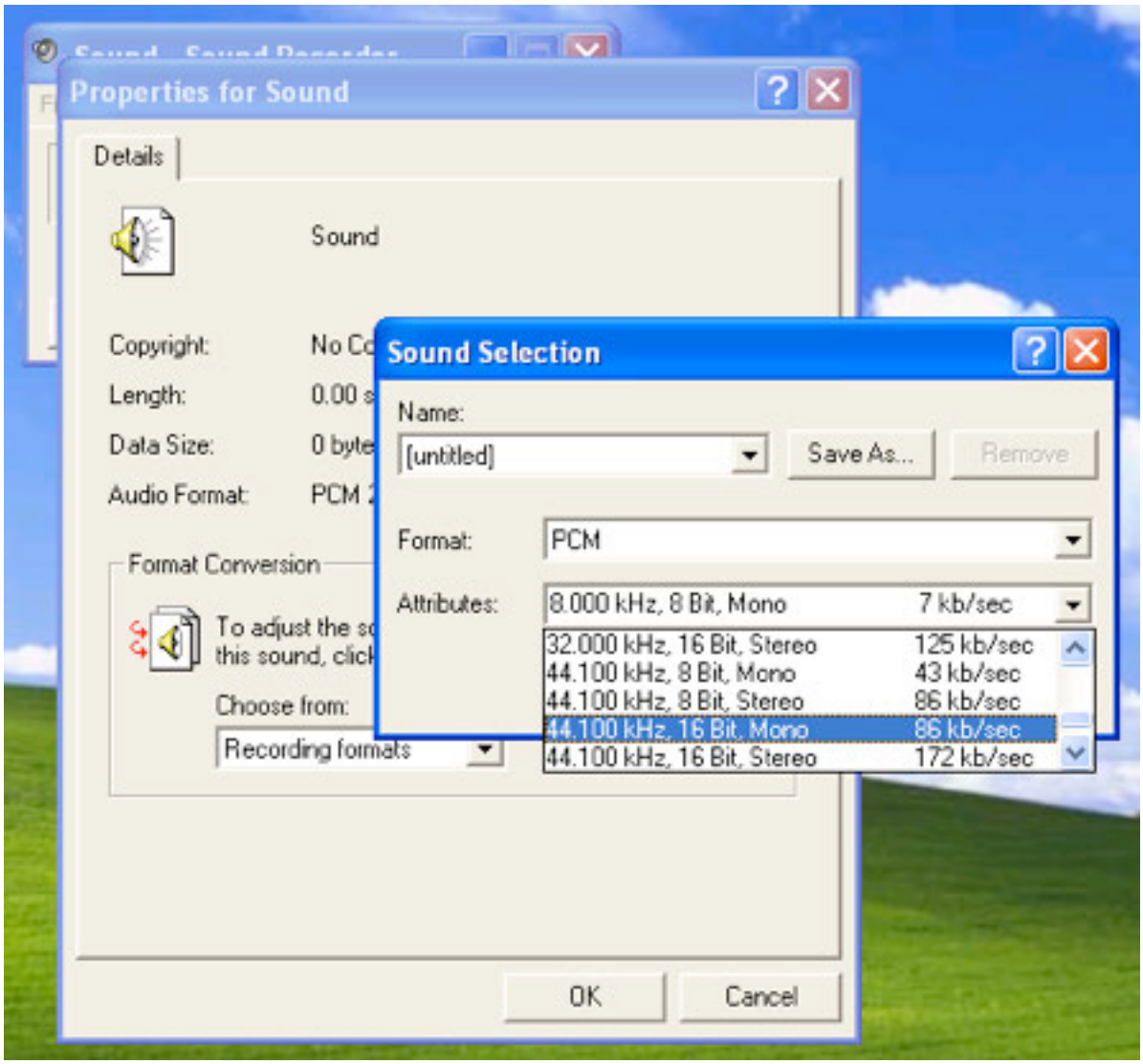
You should also set the Recoring Format to CD-Qualtiy: In the “Sound Recorder” click File --> Properties:



In the upcoming “Properties for Sound” dialog, choose “Recording Format” and then click “Convert Now”.



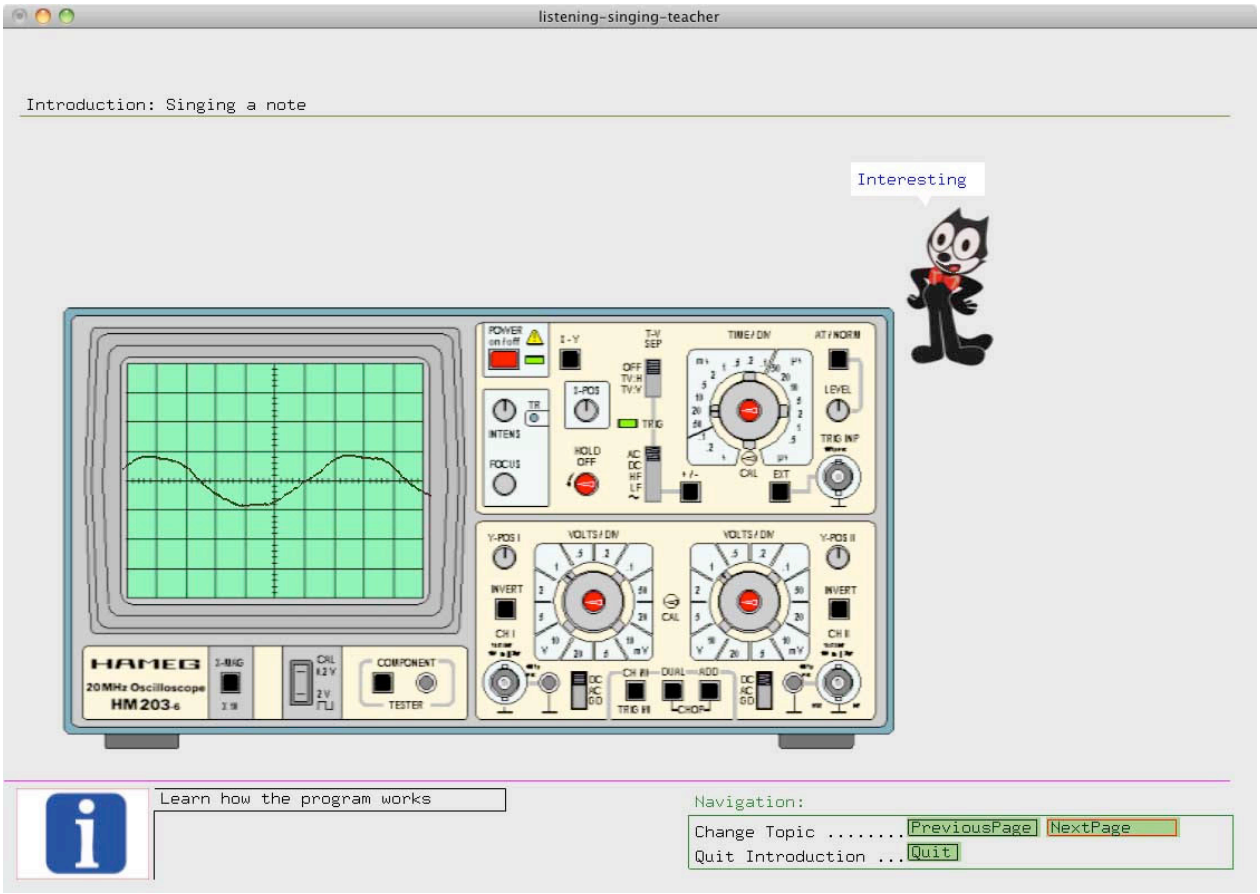
In the upcoming “Sound Selection” Dialog, choose “Format: PCM” and “Attributes: 44.100 kHz 16 Bit, Mono:



Having set all the above properties, make a recording of your voice with the “Sound Recorder” application. Replay the recording. It should sound good and clear without noise or hissing when replaying it with a normal volume level. If you can barely hear yourself, then there is something wrong with your sound hardware, since the above tools are all Microsoft supplied, there should not be a software problem.

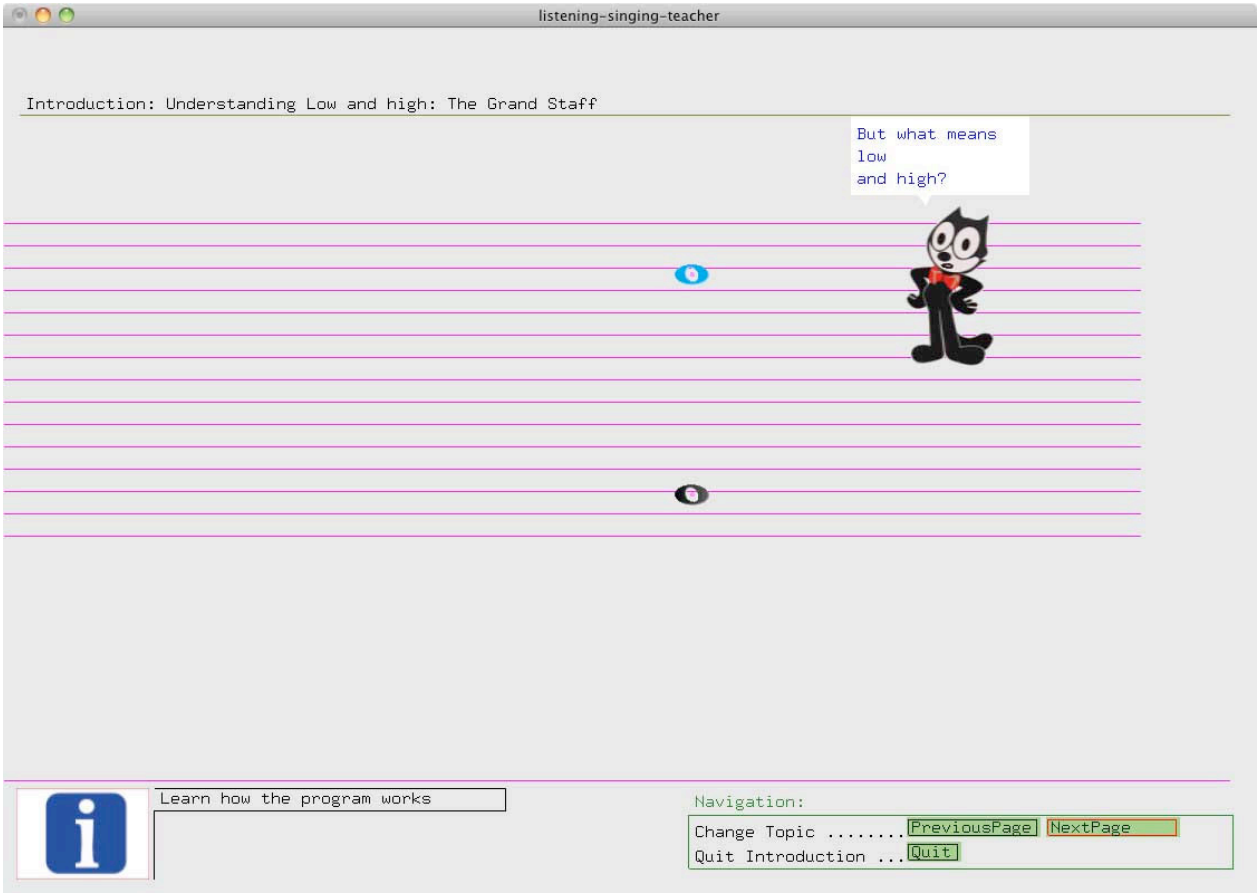
Continue after the microphone test

When the microphone is working the next challenge is to sing a note. It may be any note, low or high, but it should have a detectable pitch during a minimum sustained length. The pitch should look similar to the given sample:



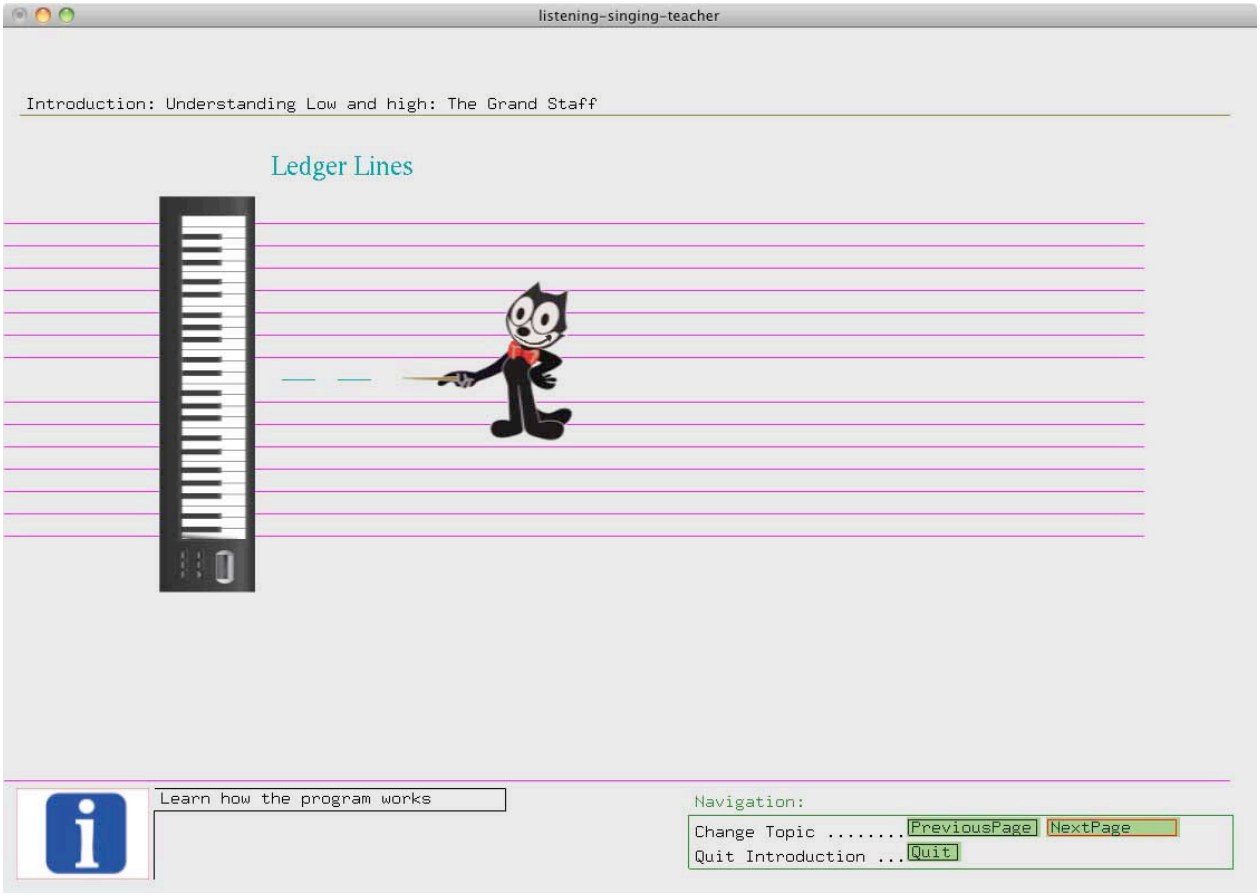
If the program cannot determine a pitch, and the input level is high enough, this program may not be suited for you: Your voice may have some characteristics with which the program cannot deal.

In the next practice part you have to sing a low and a high note. You can start with a low note and try to go higher, - which I think is easier -, or start with a high note and try go lower. You can watch the ball go up and down with your voice by changing your pitch, but you should sustain the pitches for a while, so that the program can be sure that this is a note. The lowest and the highest note should be separated by at least two lines.

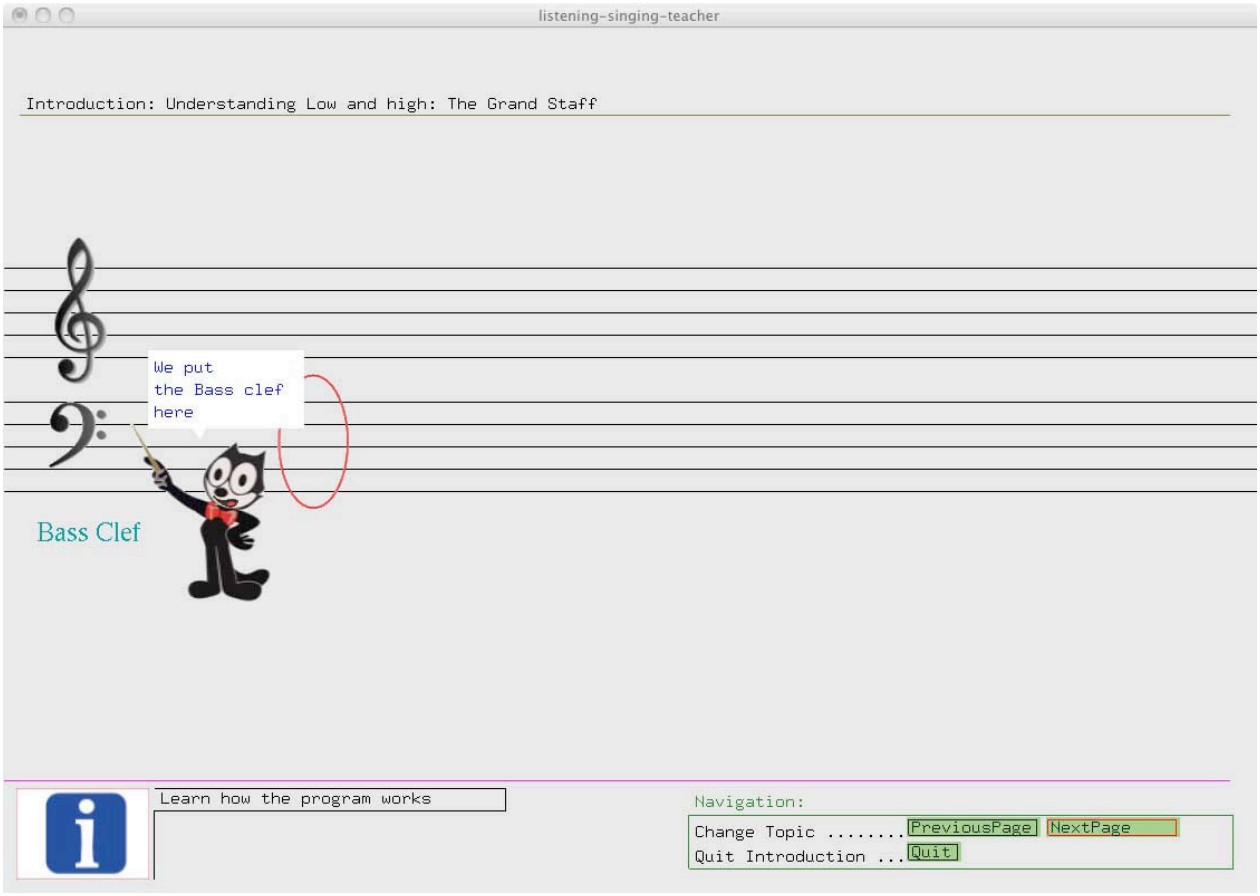


The program continues after it has recognized a low and a high pitch, which are at least two lines apart. In the above example the notes are 9 lines apart.

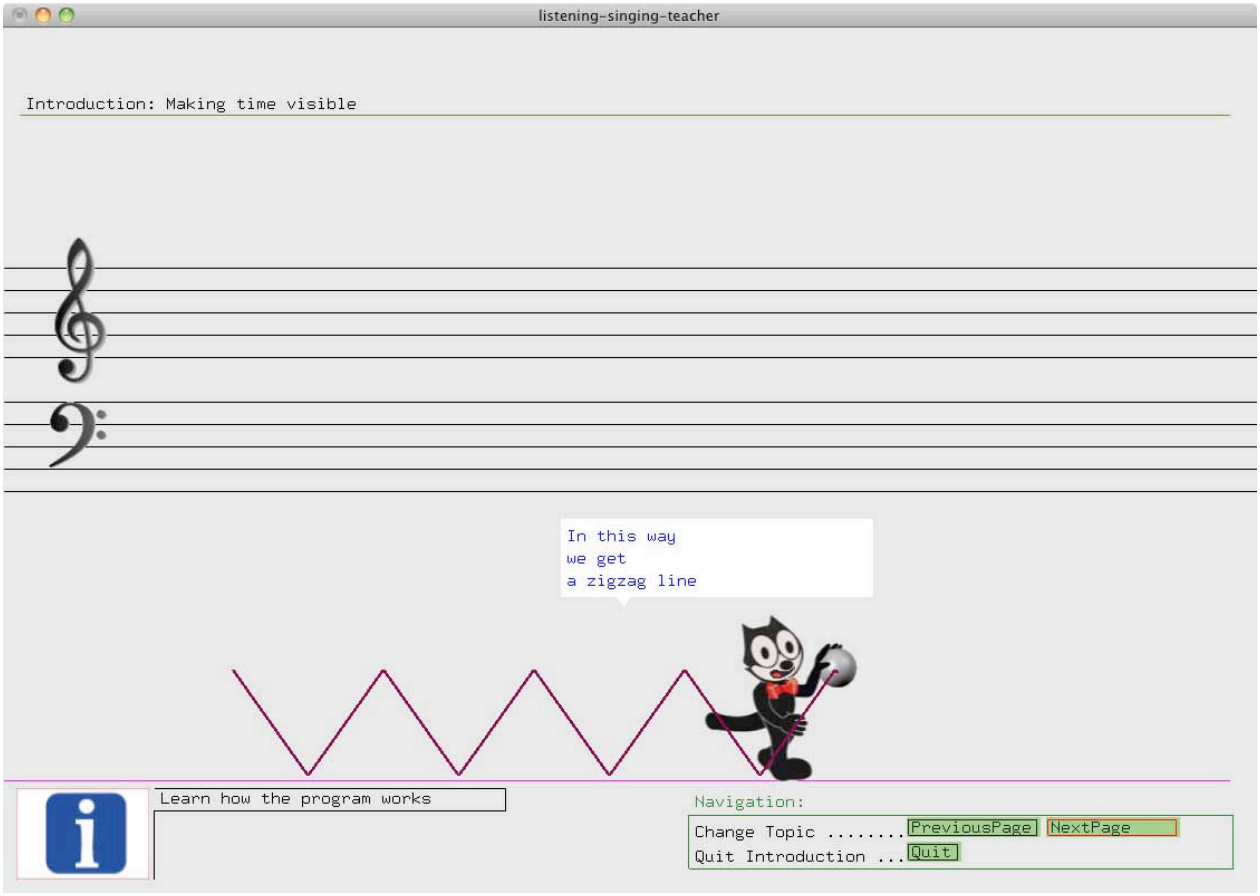
By using a piano, the relationship between the notes on the staff and the piano is explained.



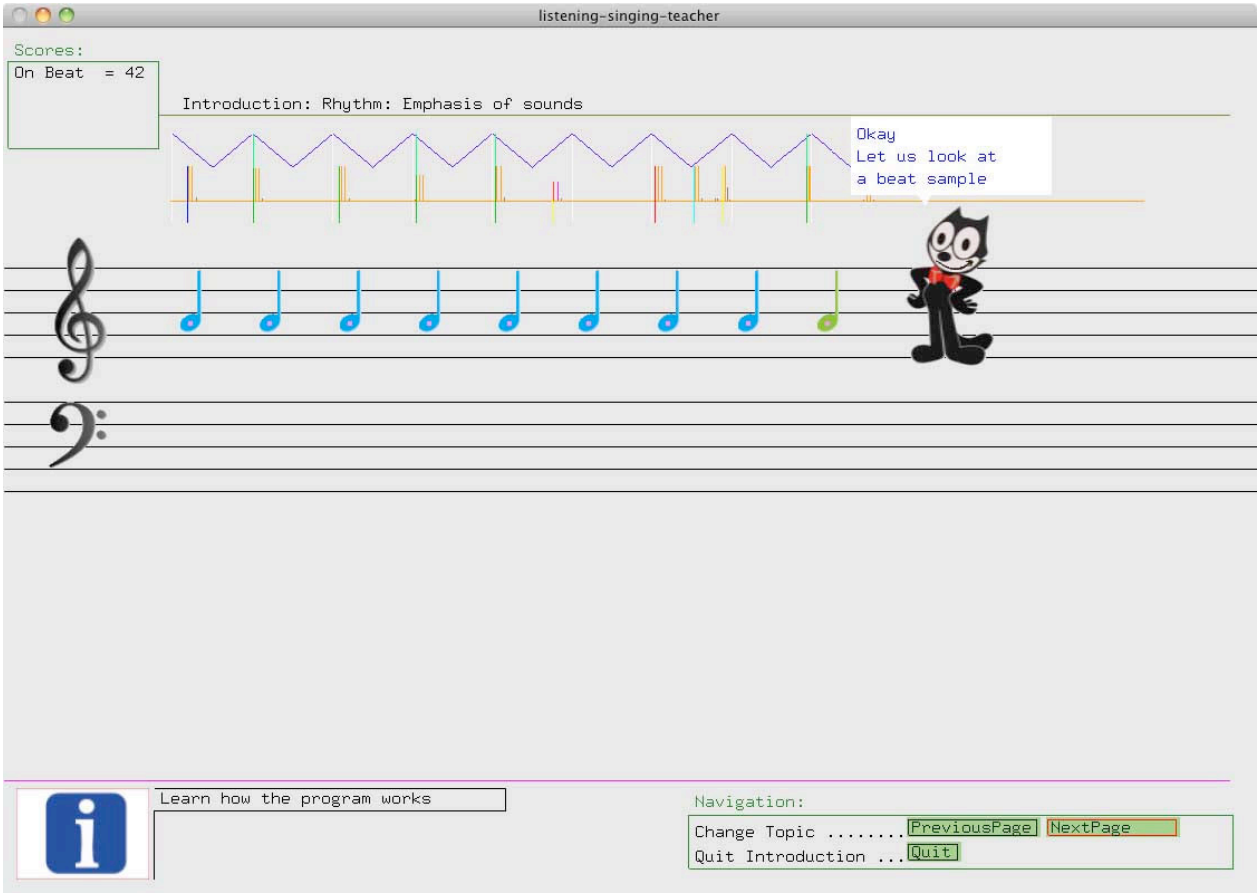
After introducing ledger lines, the treble and bass staff and the treble and bass clef are introduced.



In the following session Felix explains the steady beat.



In the following practice session your task is to clap your hands to the given tempo. Felix will count in the rhythm to four and then start walking. Try to pick up the rhythm of the counting and then continue – without interruption - counting in the same speed. To help you, Felix strikes his baton every time you should clap your hands. Instead of clapping you can also snap your fingers in the given rhythm. On the top, the zigzag line will be shown to mark the passing of the time. The instant when the line bounces on the top is equivalent to the kicking of the baton of Felix.

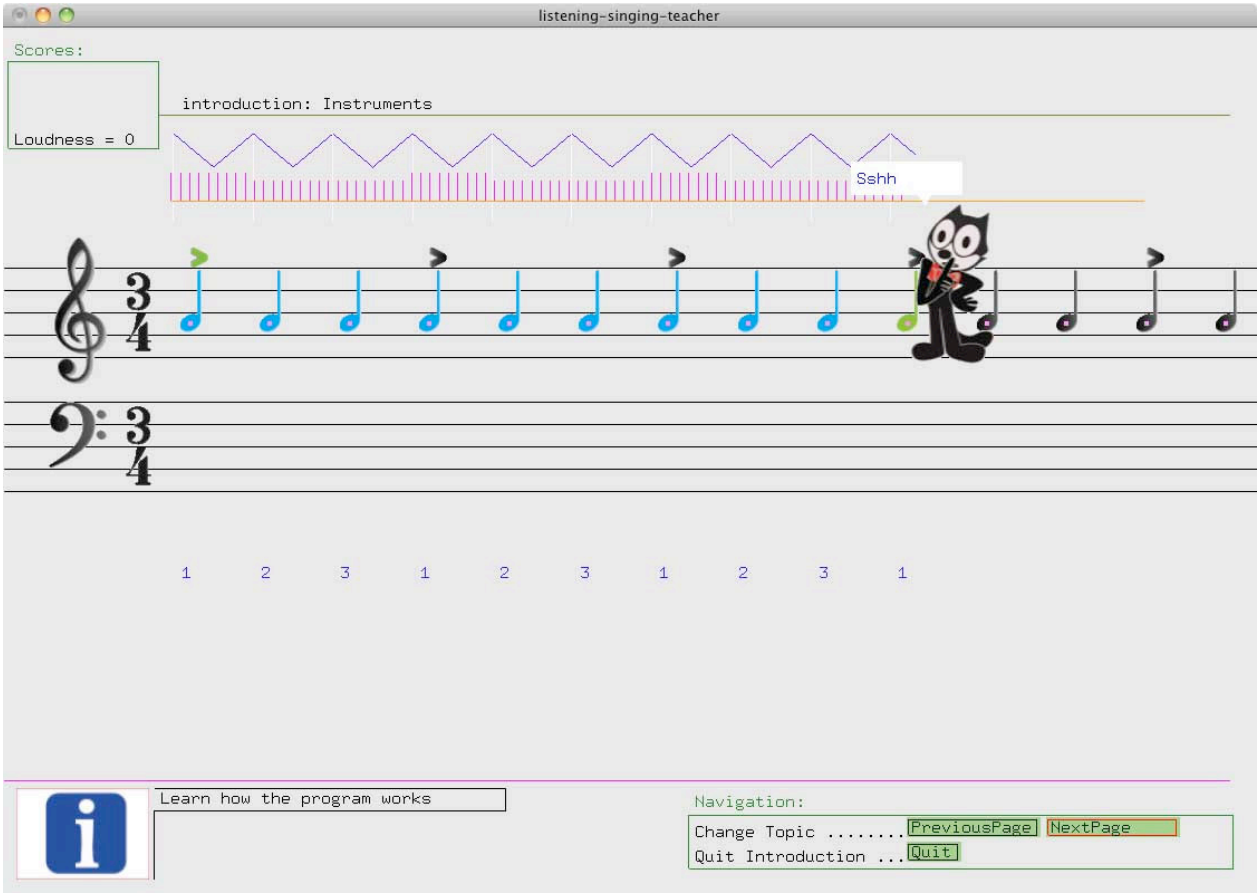


When you clap or snap your fingers at the right time, the maximum amplitude gets marked green. If you have a lot of environmental noise, you have to drag the slider "Input volume" in the Sound System Preferences to the left, so that there is no or only little noise visible between the claps (how to get to the System Preferences is explained at the beginning of the lesson). Otherwise you will not be able to finish this exercise, since a sound after the rhythm clap will turn your correct clapping into a red marking and show you the after-beat with a light blue indicator.

In the above picture you see the first note was snapped too late (blue); the second, third, fourth and fifth note are correct (green); the sixth note was too early (yellow); the seventh note was a little bit late, but was still accepted, However it turned into a red mark, because there was a noise louder than permitted before the end of the note, this after beat is marked with a light-blue bar; the eighth note was too early again (yellow); and the last note was correct again (green).

To continue the introductory lesson you only need to perform three claps correctly. Alternately you can press the "Next Page" button in the lower right corner.

After this exercise, rhythm gets explained in more detail. Again there is a short practice session at the end where you have to show your rhythm competence.

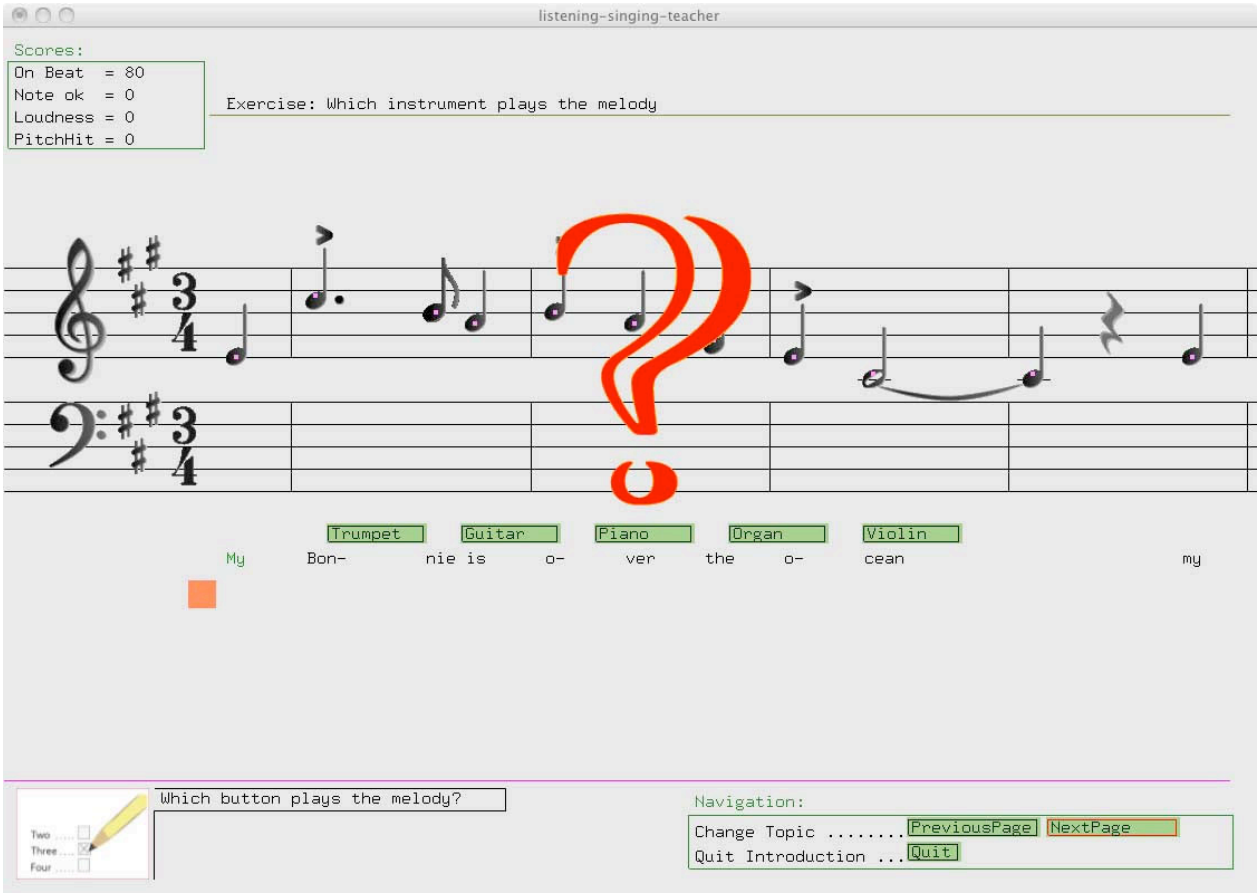


Every note with an accent marking “>” should be emphasized by making a louder sound. In the above exercise you only have to count one, two, three, one, two, three, … and emphasize the one.

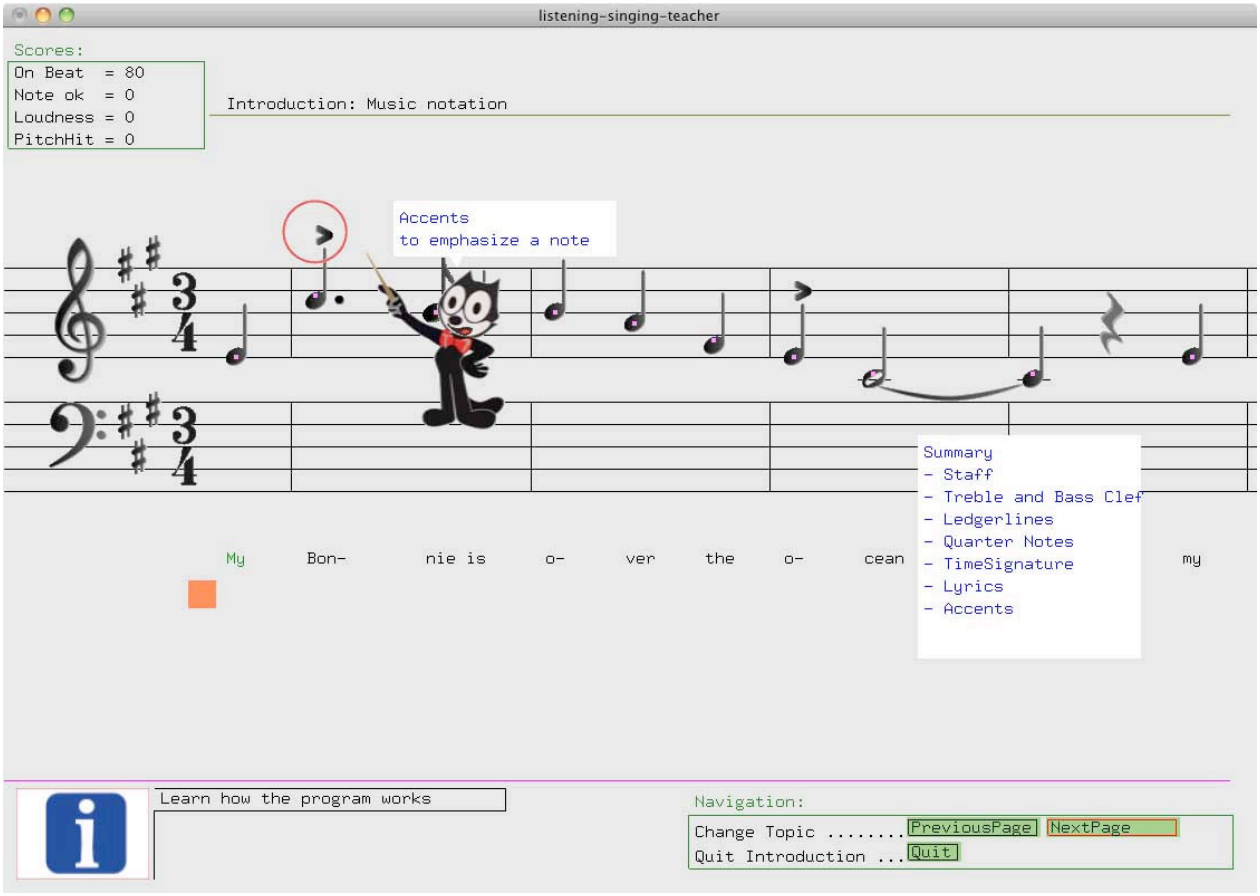
In the above screenshot, all amplitudes were correct: they are all drawn purple. You can see that the emphasized notes have larger bars. Incorrect levels get drawn with other colors.

When you are done with this practice session, Felix continues with a short explanation of characteristics of instruments.

In the next exercise your ear is challenged: Your task is to find out which instrument plays the melody of the famous song “My Bonnie”. Listen carefully, the guitar and the piano version sound similar, since both instruments produce a sound by bringing a string in vibration.



After the introduction to the instruments there is a short recapitulation of the introduced symbols and their relation to music notation.



When you see this picture you have finished the introductory lesson. You will be redirected to the select lesson dialog.

The other lessons are all practice exercises. Start by selecting “Scale one note at a time”.

New musical symbols will be introduced in the info section of each lesson. It is a good practice to change the SkipItro button to “Skip” after you are finished with a lesson. In this way you have a better overview of what you have already accomplished.

After clicking on a Lesson a short introduction to the lesson will be shown. Closing the introduction window will present the exercise options Dialog. In the beginning do not worry about the options, just click “Go” to start the exercise with the given presets.

For your information the possible options are described in the next chapter.

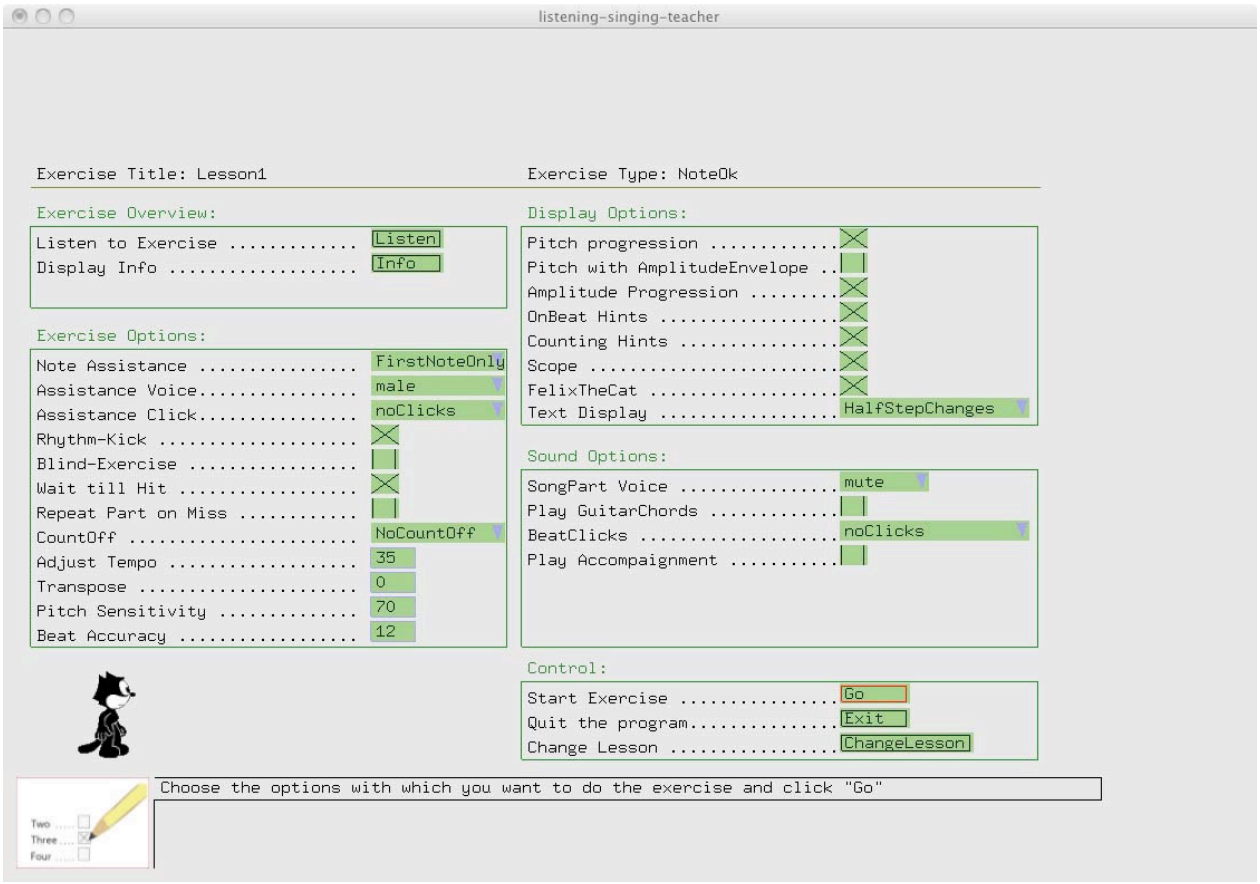
After finishing a lesson the feedback page is shown. After the feedback you have the option to replay your exercise. Since this sequence is the same for all exercises, these screens are presented here before the single lessons are presented.

Exercise Options

In the Exercise Options dialog screen you find several possibilities to ease the exercise. If you have difficulties with an exercise do not hesitate to use these options. Take all the help you need. Of course there is a small drawback: By changing the options, your score will not go into the hall of fame, since you made the exercise easier.

In the beginning when you are learning be not ashamed to use for example the “Wait Till Hit” option or to slow down an exercise. Once you have mastered the exercise you can use the standard values again. If the exercise is too easy fore you, you may increase for example the desired pitch precision or the tempo. The score will be shown as usual, but despite the increase of the difficulty, your score will not be entered in the score table. However it may be challenging for you to beat yourself with other option settings.

The options will be explained in the following paragraphs.



The Exercise Title shows you the current lesson.

The Exercise Type can be:

- Pitch:
  This type of exercise evaluates the pitch for a solfege exercise.
- Rhythm:
  This type of exercise evaluates the rhythm.
- Song:
  Is the same as a Pitch exercise, but display the lyrics instead of solfege syllables.
- Loudness:
  This exercise type evaluates the loudness.

In the Exercise Overview you can:

- Listen:
  Lets you listen to a prerecorded exercise.
- Info:
  Displays some background information about the exercise.
- Go:
  Start the exercise.

In the Exercise Options frame you find:

- Note Assistance
  Note Assistance allows you to set the help you can get for the notes. The possibilities are:
  - No Note: No Assistance is given.
  - Whole Part: The whole part will be played before the exercise starts.
  - FirstNote Only: Only the first note of a part is played before the exercise starts.
  - Refernce Note: a predefined reference note (usually a 440 Hz) is played before the exercise starts.
  - Random Reference Note: A random note is displayed and played before the exercise starts.
- Assistance Voice
  The Assistance Voice drop down menu lets you select the desired sound. You may choose among:
  - Mute: No sound will be played.
  - Flute: the notes are played on a flute.
  - Male: The notes are sung as solfege syllables (Do, Re, Mi, …)
  - Female: Not available yet.
  - Sinus: The frequencies are played as perfect sinus waves.
- Assistant Click
  With the assistant click you tell the program which beat sounds it you want it to play during the demonstration part of an exercise:
  - No Clicks: No sound will be played
  - Beat Clicks: Every beat a click sound will be heard.
  - Half Beat Clicks: Every half of a beat a click sound will be heard.
  - Quarter Beat Clicks: every quarter of a beat a sound will be heard.
  - Rhythm Clicks: When a note starts a click will be heard. If no note starts at a beat, a softer click will be played.
  - Rhythm Click Voice: The same as Rhythm clicks, but instead of clicks the counting of the rhythm will be spoken. This simplifies the learning of counting.
- Rhythm-Kick

This toggle button allows you to turn on and off the kicking of the baton of Felix. The kicking of the baton is a visual help for beginners in rhythm exercises.

- Blind-Exercise
  As the name implies, in a blind exercise, no notes are displayed. You have to play the piece by heart.
- Wait Till Hit
  This feature is very useful if are a beginner and have difficulties to match a certain pitch. Since you can follow the pitch progression on the screen, you can correct the pitch until you hit the note.
- Repeat Part on Miss
  Every exercise is subdivided into one ore more parts. Usually a part is three or four notes. But it also can be only one note, as in the first exercise "Scale one note at a time". This toggle button forces you to repeat a part, if you did not match the demands. The repetition includes the demonstration, if a note assistance was chosen. This feature is particular useful if you have problems with a special part of a piece. The program will repeat the part until you have mastered it.
- Count-Off
  Offers you five possibilities
  - No count Off: The exercise starts without a rhythm count off.
  - Count Off On: Felix will push the ball and count till the exercise starts.
  - With First Note: This is the same as Count Off On. In addition to the counting the first note of the piece will be played during the count off.
  - With Reference Note: This is the same as Count Off On. In addition to the counting a fixed predefined note – usually the note a - will be played during the count off.
  - With Random Reference Note: This is the same as Count Off On. In addition to the counting a random note will be played during the count off. This allows you to guess the note. If you have chosen Note Assistance with Random Reference Note, the randomly played note will be displayed before the exercise starts; and you can compare the note to with your guess.
- Adjust Tempo
  This option lets you play the exercise faster or slower. The number means how many beats per minute are played. Thus higher numbers play the exercise faster. Tempi of more than 120 are not recommended.
- Transpose
  This field allows you to adjust the pitch to your needs. It is also a good exercise to practice songs in different pitches, since for example "happy birthday" may be sung in a different key than the standard key, depending on the group of people in which you are.
- Pitch Sensitivity
  Pitch Sensitivity allows you to be more precise on the pitch before the program will accept a pitch as correct.
- Beat Accuracy
  This field is similar to the pitch sensitivity, but works on the beat precision.

On the right hand side of the window you find on the top some display options:

- Pitch Progression
  Pitch Progression shows the recognized pitch as a line.
- Pitch with Amplitude Envelope

In addition to the Pitch Progression, the loudness of the sound will be shown as a envelope curve.

- Amplitude Progression
  This toggle button allows you to turn the display of the Amplitude progression on or off.
- OnBeat Hints
  OnBeat Hints shows you the calculated difference of the recognized and expected kick with a colored bar: yellow too early, green within range, dark blue too late.
- Counting Hints
  The counting hints are displayed below the lyrics and help you to learn to count rhythm.
- Scope
  The scope shows the waveform from the input device.
- FelixTheCat
  If you do not like me, here is the possibility to turn me off! Just kidding: Turning off display features saves computing time and is recommended if you have a really slow processor (A B&W G3 may probably not work with the standard configuration). But usually more RAM and a fast SSD disk is the better solution. Recognition problems tend to be more dependent on the microphone and the input device settings than the processor speed.
- Text Display
  With this drop down menu you can display additional information to each note: the so called Half Step Change Hints Line or Notation Hints Line).
  - Lyrics: No additional text is displayed.
  - PitchNotation: Displays the scientific notename (e. g. A4).
  - Solfege: Displays the absolute solfege syllables (e. g. Do, Re, Mi, …)
  - Degrees: Displays the degree number of a note (e. g. 1, 2).
  - Rel. solfege: Displays the relative solfege syllables (e. g. (Do), (Re) …).
  - HalfStepChanges: Displays the change to the previous note (e. g. +2)

Below you can set a few sound options:

- SongPart Voice
  The song part voice will play along with you during the exercise and thus lets you hear where your pitch should be. The choices are:
  - Mute: No sound will be played.
  - Flute: The notes are played on a flute.
  - Male: The notes are sung as solfege syllables (Do, Re, Mi, …)
  - Female: Not available yet.
  - Sinus: The frequencies are played as perfect sinus waves.
- Play GuitarChords
  To make the exercises more fun you can play guitar chords along the exercise. You should wear headphones, so the program does not get confused when it picks up the playing of the chords. Otherwise, pitch recognition may deteriorate.
- BeatClicks
  This option lets you play the beat clicks during the exercise. The same precautions apply as with the chords. Your options are:
  - No Clicks: No sound will be played
  - Beat Clicks: Every beat a click sound will be heard.
  - Half Beat Clicks: Every half of a beat a click sound will be heard.

  - Quarter Beat Clicks: every quarter of a beat a sound will be heard.
  - Rhythm Clicks: When a note starts a click will be heard. If no note starts at a beat, a softer click will be played.
  - Rhythm Click Voice: The same as Rhythm Clicks, but instead of clicks the counting of the rhythm will be spoken. This simplifies the learning of counting.
- Play Accompaniment
  The last toggle button in this frame offers you an even more realistic environment, by playing a few instruments along your singing. If you transpose a song, the chords and the accompaniment are also transposed.

The control section allows you to

- Quit the program
  Exits the program.
- Change the lesson
  Brings you back to the Select Lesson Dialog.

Feedback

When you have finished an exercise, you will automatically be transferred to the feedback screen:

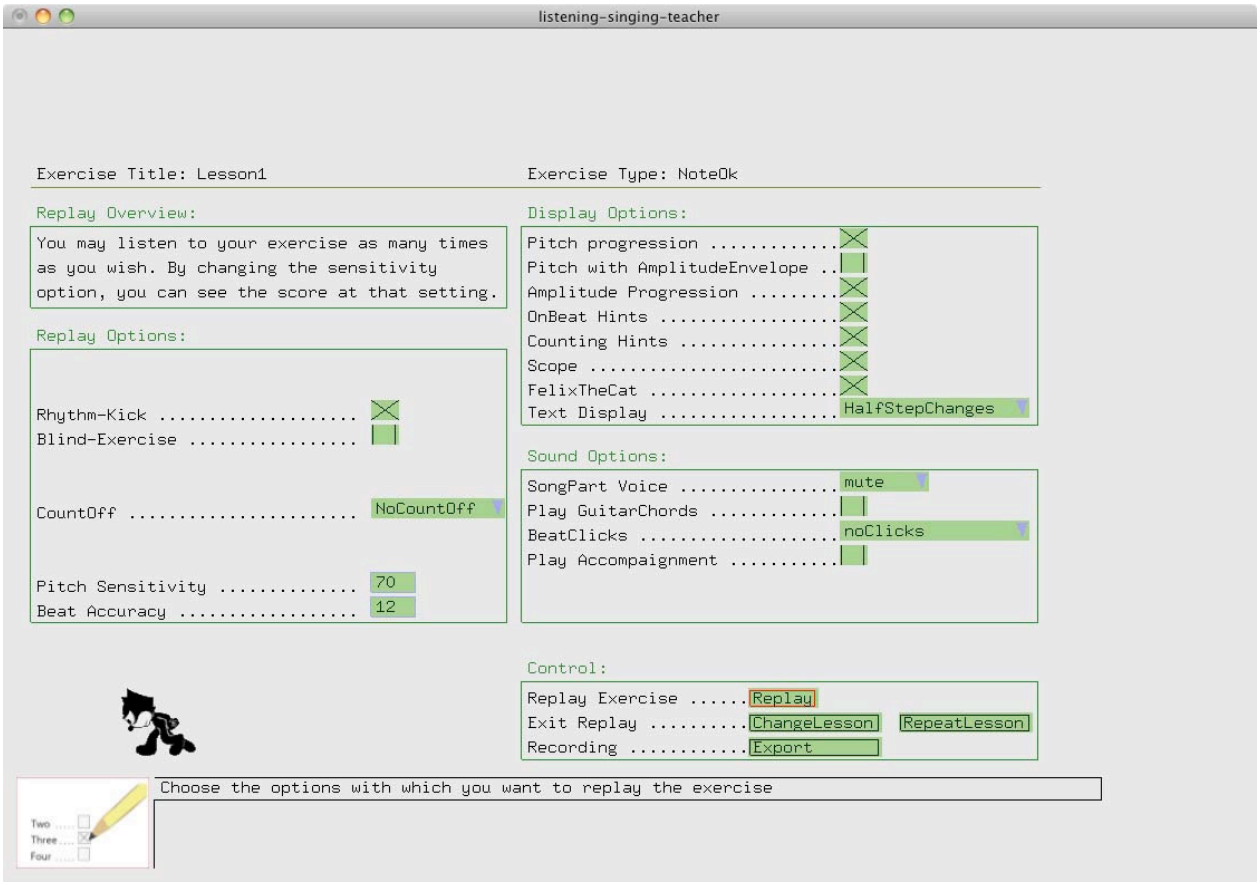
The red number in the middle of the screen shows you the score for this exercise.

Below you see your previous high score, and the evaluation from Felix.

In the Control area you can either continue and replay your exercise, or go directly to the Select Lesson dialog.

Replay Options

After the exercise you have the chance to rehear your performance.



The options are almost the same as in the exercise options dialog. To set different options makes sense, in the way that you can compare your voice to an instrument. Rehearing is a very good practice, you probably learn more from listening than only from performing.

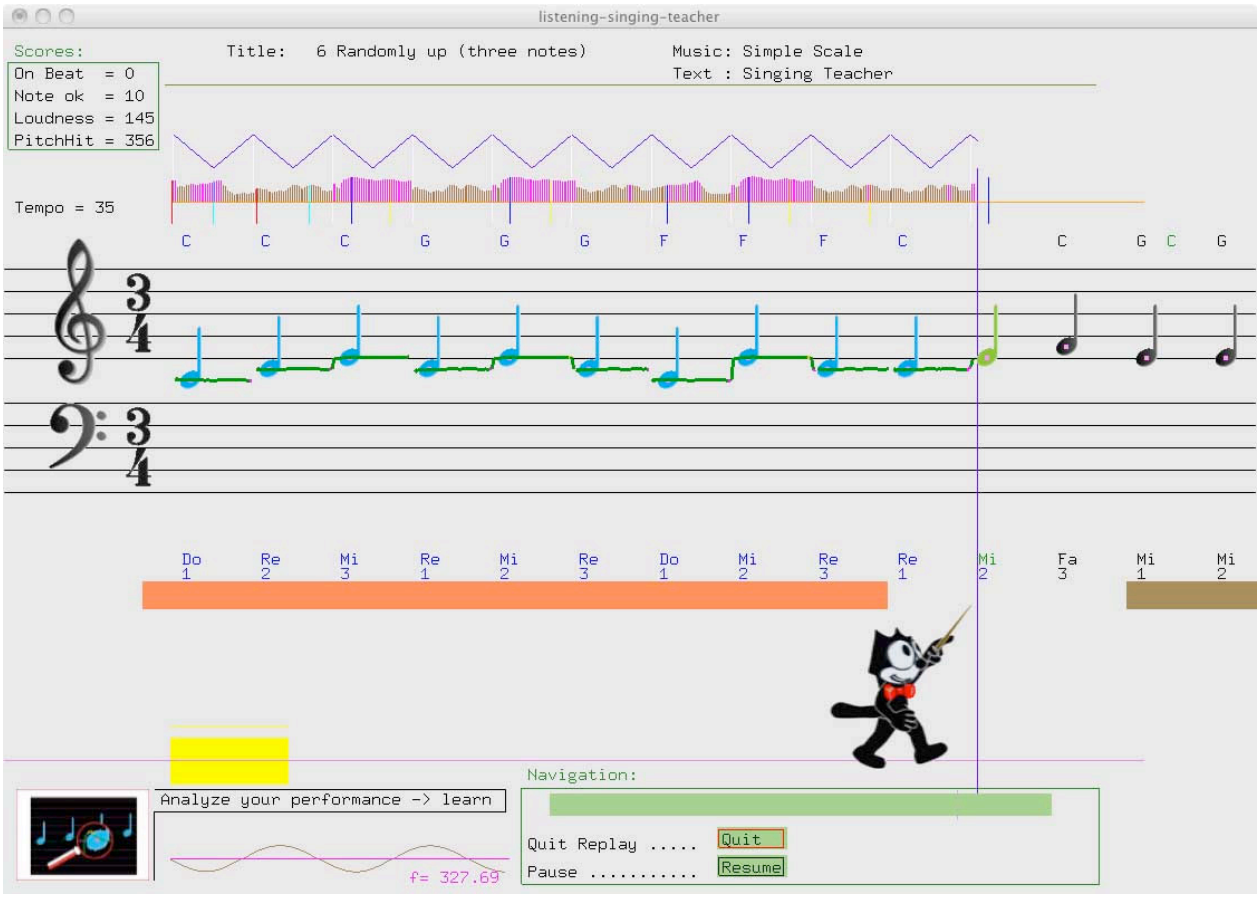
You can also change the pitch sensitivity and the beat accuracy. This allows you to see how you would have performed if stronger measure were taken.

After the replay you come back to this screen. You can replay the exercise as many times as you want by pressing Go. Pressing quit will bring you back to the Select Lesson window.

Finally the button Export will write a wave file of the recorded exercise. You must rename the file if you want to keep it, otherwise a new export will overwrite the file.

Lesson Exercises

For the general discussion of the lesson exercises, the lesson “Randomly up (three notes)” is depicted here.



In the upper left corner you see the Scores frame. It tells you what the current score points are. Only one of the four scores will be used for the score table. Depending on the exercise type the pitch, rhythm or loudness score will be evaluated.

To the right in the top line you find the title of the exercise or song, who has written the music and who was the text writer.

Below you see the zigzag line, which shows the passing of the time in relation to the beat. A beat starts when the line bounces on the top.

Right below you see the amplitude curve. In this curve too soft sounds are depicted as a light purple bar, sounds within the correct range are purple, and sounds, which are too loud, are white.

In the same area and below you see the bars for the on beat exercises. Blue bars mean you where too late, yellow bars mean you were too early, green bars tell you that you were within the limits. A red and a light-blue bar show you the correct beat, which turned to a wrong beat (red), because

there was an after-beat (light-blue) before the next note started. Since “Randomly up (three notes)” is a pitch exercise, you can ignore the amplitude and on beat feedbacks.

Below is the main window. On top of the main Window are the guitar chords (not shown here). The main window contains the usual music notation items like staffs, clefs, key-signature, time-signature and of course the notes.

The blue notes are in the past, the green note is the actual note, and the grey notes are in the future. Through the past and actual note you see the pitch progression line. If the line is yellow the pitch is too high, violet means too low and green okay.

Still belonging to the main window are the lyrics. In this case there are only solfege syllables (Do, Re, Mi, …).

Below the lyrics is the counting hint line. Counts which do not get counted loud are depicted with a softer color (no sample of a softer count shown on this screenshot).

Further down are the parts bars. The current part starts right after the orange bar ends. The part is finished when the olive bar starts. In this example we are going up in three’s, hence three notes are played in a part, before the next part starts. This means that you can listen to the three notes, before you have to sing the three notes.

And last but not least you see Felix striking the baton if a new note is due. Also shown is a long line from the bottom to the zigzag line, which walks along with Felix. This makes it easier to see on which lyric you are.

On the bottom is the wave depicted from the scope. In the navigation frame you have the possibility to quit the exercise. In case you have chosen the option “Wait Till Hit”, there is an additional button labeled Skip, which allows you to continue to the next note without matching the note.

Overview of Lessons/Exercises:

Introduction

The introductory lesson is explained at the beginning in a separate chapter. It gives you an overview on how the program works.

Catch the note

This is a warm up pitch exercise. In this Lesson we go a scale upwards, note by note.

It also introduces you to the solfege system. In the eleventh century, Guido of Arezzo developed a system, which assigned names to notes. Two of the note name were “So(l)” and “Fa”, they gave the system the name: solfege (from the Italian solfeggio). The solfege system uses solmization

syllables: Do, Re, Mi, Fa, So, La, Ti, Do for the notes. In ascending order they are pronounced as:

Written	Pronounced	Meaning
Do	Doh	The strong tone
Re	Ray	The hopeful tone
Mi	Mee	The calm tone
Fa	Fah	The desolate tone
So	Soh	The bright tone
La	Lah	The sad tone
Ti	Tee	The piercing tone
Do	Doh	The high Do

Solfege uses the voice to produce the sounds. The solfege syllables help you to associate a pitch to a syllable. To sing with syllables in the correct pitch develops the basic skill of singing. This is essential to developing the ability to sing in the head. By repeatedly producing and hearing the same syllable with the same pitch, the inner hearing and the ability to mechanically produce the same sound again and again, enhances the feeling for the notes. By learning a scale, you get the feeling for what sounds fit in a particular harmony or music system.

Listening Singing Teacher does only support the “fixed” “Do (Doh)”, where the “Do” is fix assigned to the pitch C. In relative “Do” the pitch is assigned to the starting note of a scale. Relative “Do” may be confusing in the beginning, since “Do” may be assigned to different pitches. But to get the whole picture of music theory, it is a very useful tool. Listening Singing Teacher is aimed for beginners; therefore it starts with fixed “Do”.

The teacher first sings the note, then it is your turn to repeat the note. This exercise has the option “Wait Till Hit” set. This option waits for you until you match the pitch. Sing the note and look for the pitch curve. If the curve is blue and below the red dot in the note, try to go higher. If the line is yellow, try to go lower by relaxing your voice. If you still cannot match the note, do not try too long: just press the button “Skip”. The program will advance to the next note. If you are constantly too low, go back to the “Select User” screen and change your tessitura to medium or low.

In this first exercise every note you hit will give you 10 points. In this way if you never have to press skip you will get 80 points the maximum possible. If you have difficulties do not try too long, over time you will see that you gain better control over your voice: You will be able to direct you voice up and down at your will. At this time you will also see your lower and upper limit, do not rush to push this limits: Go slowly, stay in your comfortable range for all exercises. If necessary adjust the pitch with the transpose option or select another tessitura.

Another option is to have the teacher sing along with you. To enable this option, choose “Male” from the “SongPart Voice” dropdown menu. With this option enabled the teacher will sing along with you and you can easier adapt to the pitch. In this case you should wear a headset, so that the microphone does not pick up the teacher’s voice.

Remember that when you use these additional help options, the score will not be recorded in the

score table. Do not worry, at the beginning take all the help you can get, to make progress. When you feel comfortable enough, you can redo the exercise without any option changes and get into the hall of fame.

Also make it a habit to rehear your performance. This is especially useful when you get better and want to perfect your ear and voice.

Pressing the button “Quit” will bring you back to the lessons choice dialog.

Scale: Sing after me

This is the same exercise as the first one: The teacher first sings the note, and then it is your turn to repeat the note. But this time the notes will not wait for you. You make points by matching the pitch you sing with the height of the red dot of the note. The longer you sing in tune with the notes the more points you get.

Scale two notes at a time

This is also a pitch warm up exercise. In this lesson we go a scale upwards, two notes at a time. The teacher will sing two notes, then it is your turn to repeat the notes. This exercise forces you to listen and remember the notes in your head, before you start producing them from your inner ear.

If you have difficulties singing two notes correctly, choose the option “Repeat Part on Miss”. This option will present the same two notes again, until you have managed to get them right.

Randomly up (one note)

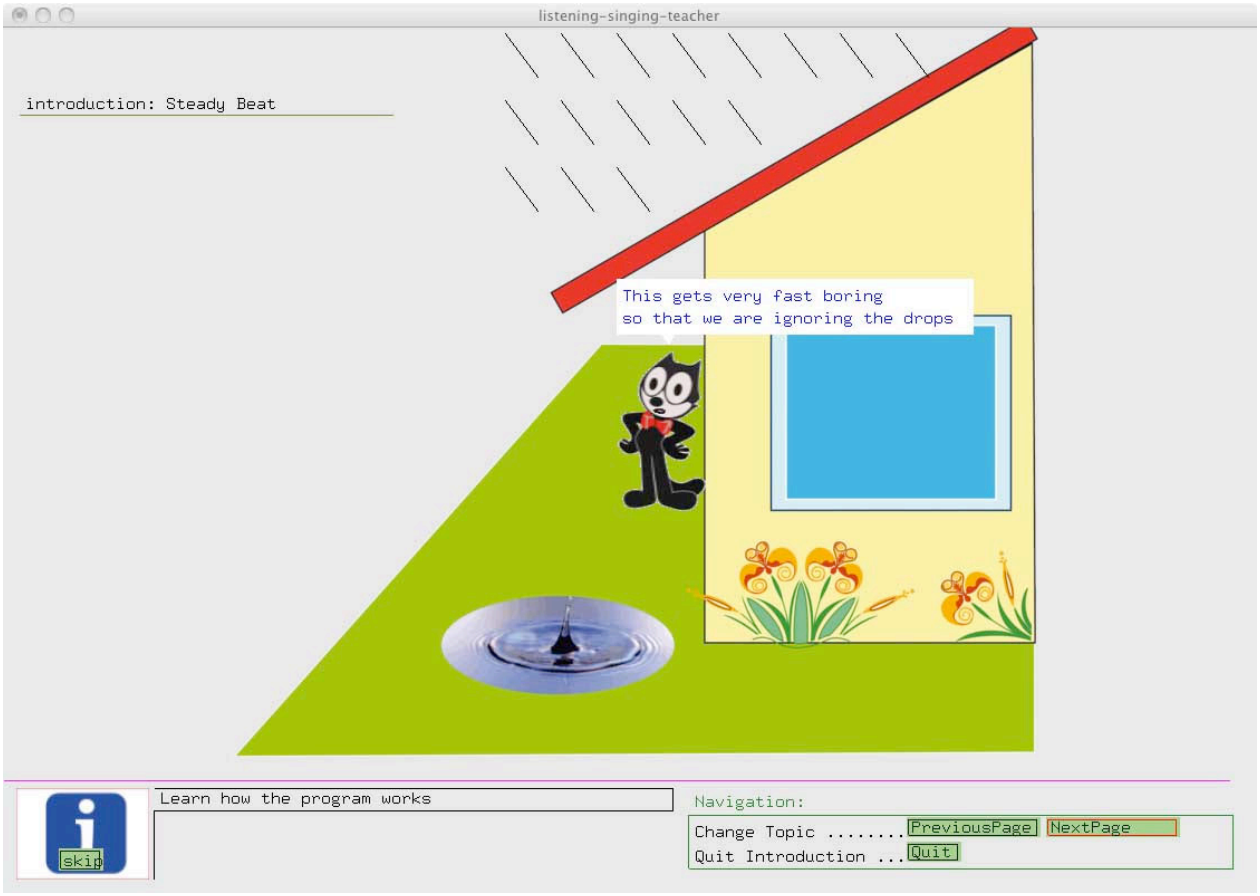
In this lesson we go slowly up the scale with random notes.

By randomizing the notes, the notes not always go up: sometimes they go down. By keeping the notes in a small interval, the mechanical producing of the pitch should be easier to accomplish. This gives you the confidence to hit a pitch, when it is not in an up going pattern.

Slowly means, we go along the scale for three notes, then those three notes are presented in random order two times. After that we follow the scale again, but this time we start the three note series with one note higher. We do this until we have reached the highest note of the scale.

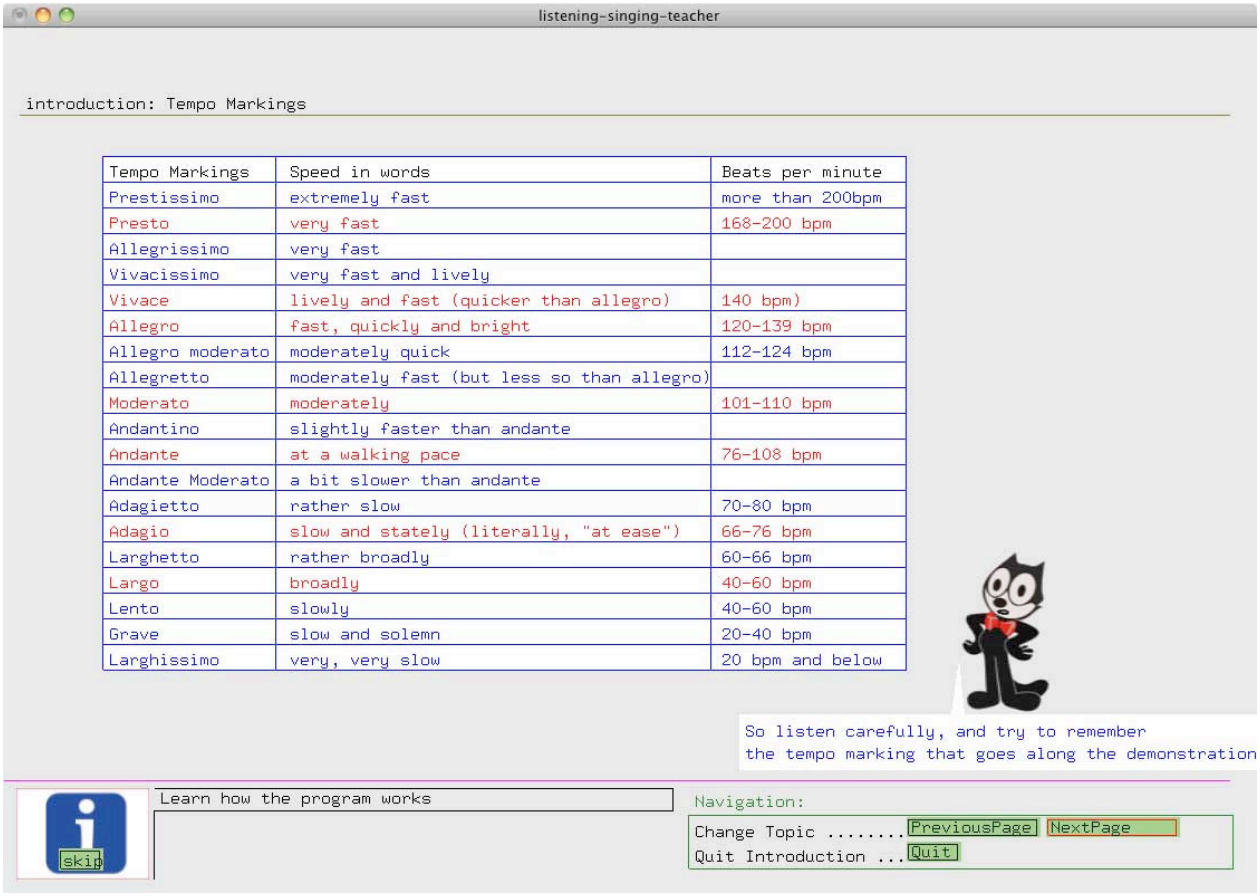
Tempo Markings

Tempo Markings is again an animated lesson to make you familiar with tempo. A steady beat alone is pretty boring. However if a steady beat comes out of nothing, it will get our attention. After a while we will ignore the steady beat again.



However, if for example the rain gets stronger, the beat of the falling drops will increase, and we will realize the falling drops again. In this way change will get our attention and steadiness gives us a secure feeling that everything is okay.

The most common tempo markings are summarized in the following table:

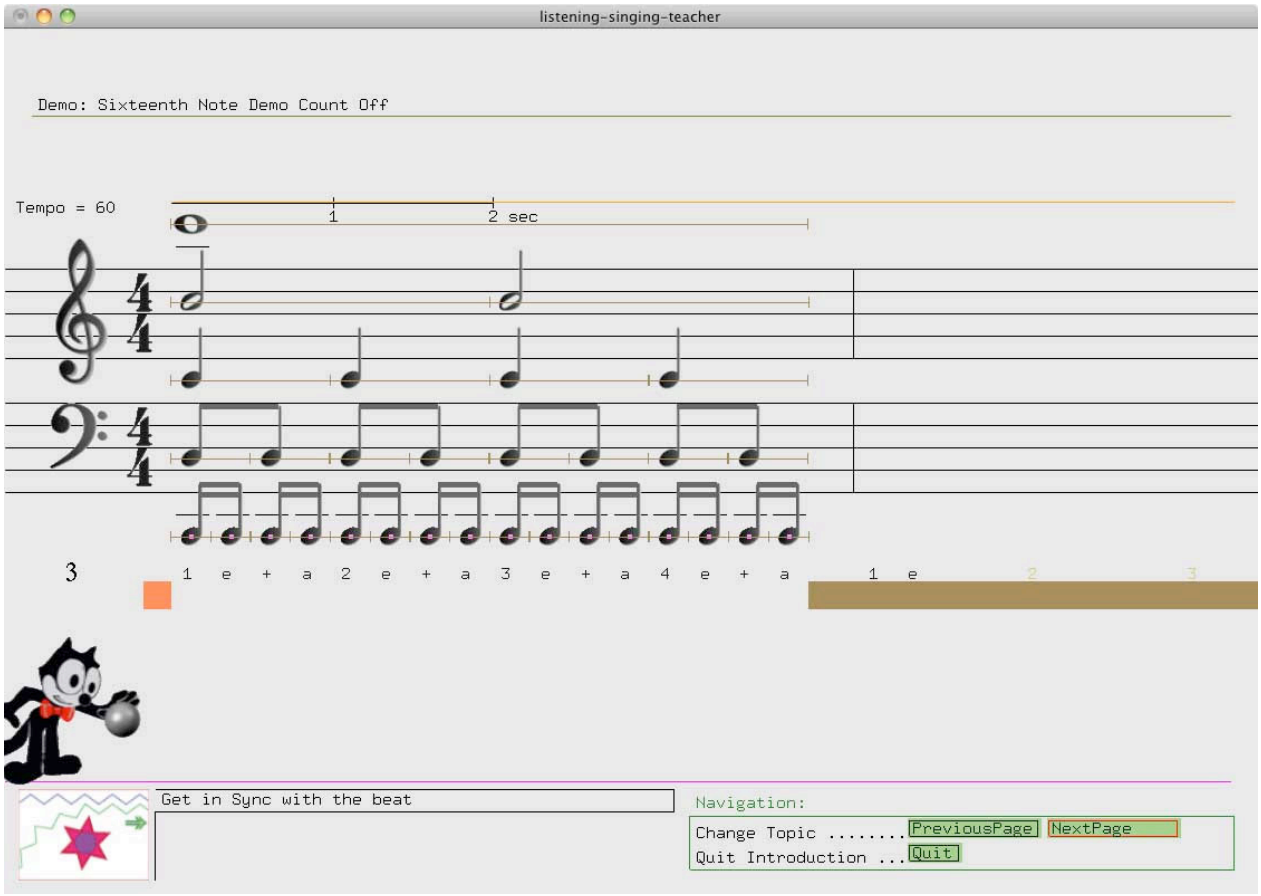


Listening Singing Teacher allows you to set the tempo for the exercises. Use this option to slow down an exercise.

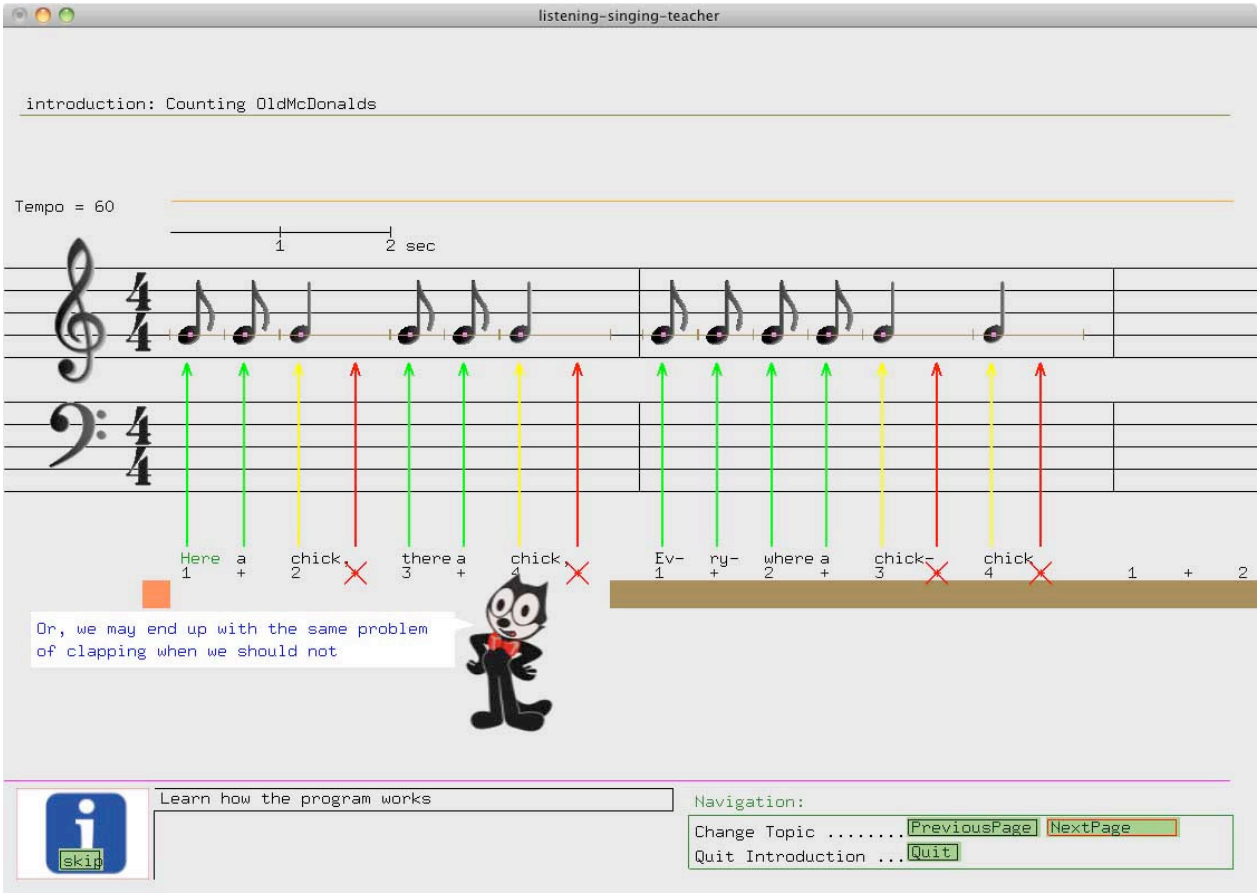
Note Length

In this animated lesson the different note symbols and their relative duration against a beat is introduced.

In the picture below, the relative duration of the note symbols is graphically depicted.



In this lesson you also will learn, how to count rhythm.



Below the lyrics, you see find the counting hints. Every note, which falls on a beat, gets a number. Eighth notes get an “and”, - here depicted as a plus (+) -, and should only be counted when they are necessary.

Notes longer than a beat

This is a rhythm exercise. We will learn to count notes longer than a quarter note. A note, which is double as long as a quarter note is, called a half note. The symbol of a half note consists of a so-called empty note-head and a stem, and looks like this:

Duration
|<---------->|

A half note has the duration of two quarter notes.

Duration
|<---------><---------->|

If there are quarter notes, you would sing La, La. If there is a half note you sing just one La, but twice as long.

The symbol for notes, which take a whole measure, - that is four quarters - is called a whole note. The symbol looks like this:

Duration
|<--->|

The whole note has the duration of two half notes

Duration
|<---><-->|

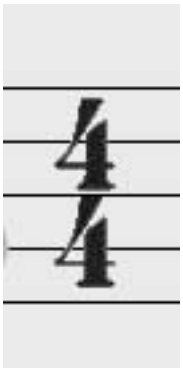
or the duration of four quarter notes

Duration
|<---------------------><---------------------><---------------------><---------------------->|

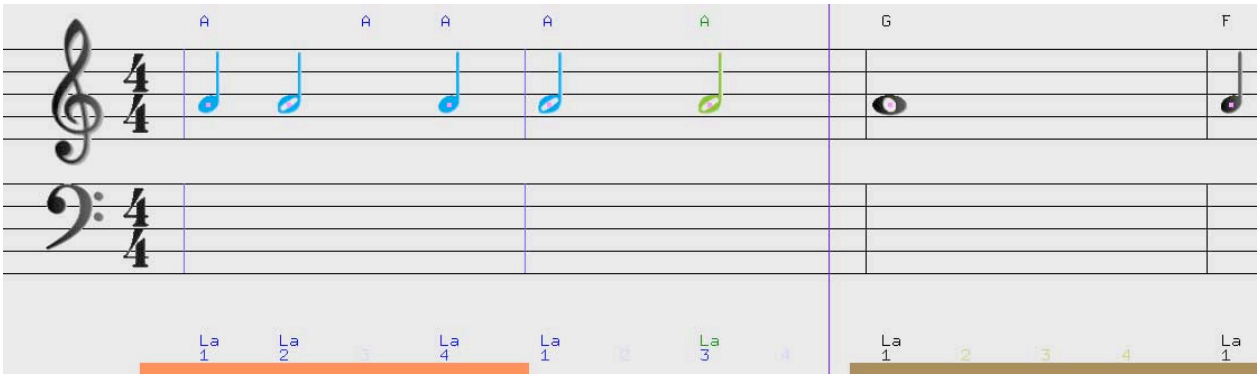
Your task is to clap your hands when Felix strikes his baton. Please do not sing during rhythm exercises, since this may lead to so-called after beats. This is when a noise is made before the

duration of a note ends. In rhythm exercises you should make a sharp noise when the note is due to start. Otherwise it should be quite.

This exercise introduces you to the counting of rhythm. Remember that you restart counting, when you have reached the upper number of the time signature.



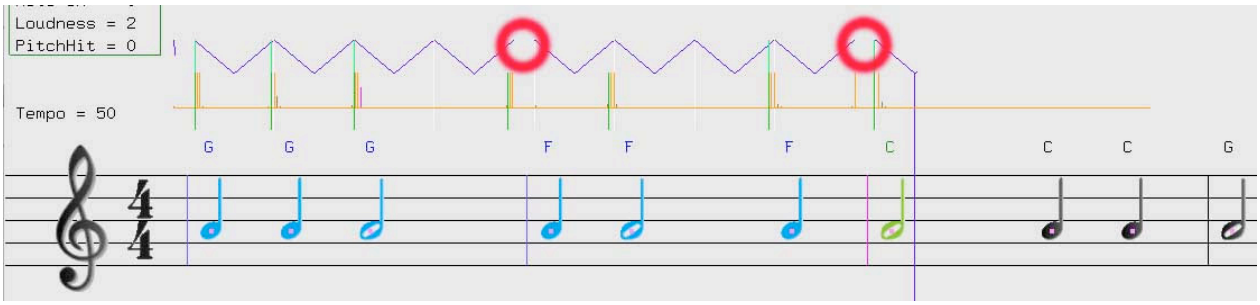
Below the lyrics-line you find the counting hints:



You count each number, but you only clap when the number is violet. Felix will not kick the baton on brown numbers. The brown numbers you just keep counting in your head, but you do not clap them. In the above example Felix will kick the quarter note with 4 and then the half note with a one, then leave out the brown 2, kicking again when the next half note with a 3 is due, then leaving out the 4 and continue with the quarter note with a one in the next measure.

In this lesson you also see vertical bars in the staff. The bars are used to better visualize a measure (or bar): The moments when you start counting from one.

Since the bar lines need some space in front of the notes, the zigzag line now looks a little different:



There are now gaps before a measure starts. Just think of them as not existent. If you clap the first note of a measure too early, the yellow feedback bar (too early) will occur of course in the zigzag line before the gap. The barely visible bars are just a help for you to better see the beat starts.

In the “exercise options” menu you can choose “Rhythm click voice” from the “Beat Clicks” drop down menu. Then Felix will count aloud. In contrast to the kicking of the baton, Felix will also count softly the numbers, which are brown.

If the exercise is too fast or too slow for you, you may change the tempo in the “Exercise Options” menu. A lower value slows down the beat; a higher value makes it faster.

Randomly up (three notes)

This is again a pitch exercise. In this lesson you listen first to three notes before it is your turn to start singing. This means you have to remember three notes. This helps you to develop your aural memory.

Mary had a little lamb

Now it is time to combine our skills and to try our first song. Here we will use real words instead of solfege syllables. If you find it difficult to sing some vowels with the right pitch, but you have mastered the singing with solfege syllables, you can sing of course the solfege syllables instead of the words. Anyway, it may be a good practice session to go back to the simple scale lesson, and instead of singing syllables, always sing the same vowel (e. g. “u”).

To make a lot of points, you should hold the note as long as the note is. While you sing do the counting in your head, but do not clap during the exercise, since this may lead to a worse pitch recognition.

Again for training purposes you may choose different options from the “Exercise Options”. E. g. you may slow down the song, or let Felix do the counting in the head for you.

When replaying the exercise, you may choose “play Accompaniment” to hear your voice in another surrounding. If you have headphones, it may be easier for you to sing along the accompaniment than to sing a solo session.

Quarter Rests

No sound in music is also a great way to deliver a rhythm feeling. Although rests are silent, you have to honor them. The beat continues at a steady pace, so you must keep on counting. The symbol for a quarter rest is as follows:

The quarter rest has the same duration as the quarter note. But instead of making a sound, you must be quiet. This is not always easy, as you will see in this exercise. Don't let you fool to clap when a rest is shown.

In the rhythm feedback section a silent note will also be shown as a green bar like a good note. Too early and too late clapping will also be shown in the appropriate color, but in this case the message is: you should not have clapped at all. Clapping at the time due for a rest, will be counted as an error and be shown as an orange bar.

Notes shorter than a beat

To depict notes shorter than a beat, flags get added to the stem. An eighth note has one flag:

The duration of an eighth note is half that of a quarter note.

The counting of eighth notes is by sliding an "and" between the number counting. So a two measure with four beats full of eighth notes would be counted as follows: **One** and Two and Three and Four and **One** and Two and Three and Four and, … . Usually the first note in a measure has a stronger accent, which is here represented by the fatter **One**'s. Pay attention to the "and" at the end of the measures, you do not make any pauses before the one starts!

If there are no eighth notes in a measure you may omit the speaking of the "and's". The steady beat, which gives you an orientation on where you are in the measure, is made with the numbers,

not with the “and’s” in between. Therefore it is preferable to leave out unneeded “and’s” in the counting.

Use the possibility to let Felix count the exercise for you. In the counting hints line the “and” is shown as a ”+”.

Are you sleeping

This is a traditional French song, which contains eighth notes and quarter rests.

Although it does not belong to the exercise, you can pretend that this is a rhythm exercise. Do not sing and try to clap the rhythm. Look in the Score section (top left) how well you performed.

When learning a new song, it makes sense to do a separate rhythm exercise before the singing. In breaking down difficult parts into simpler sessions you get acquainted to the piece and get a more comfortable feeling, when you do the actual performance.

As a separate exercise, vary the tempo and enjoy the accompaniment along your singing.

Up range 5 (one note)

This should be an easy exercise, we go up randomly the scale in the range of five notes. This exercise is a preparation for the next exercise.

Up range 5 (five notes)

Now we build upon your aural memory. You have to remember five notes at a time. As before, first listen and try to memorize the notes, and then sing them.

London bridge

A simple version of the song: London bridge.

Up range 8 (one note)

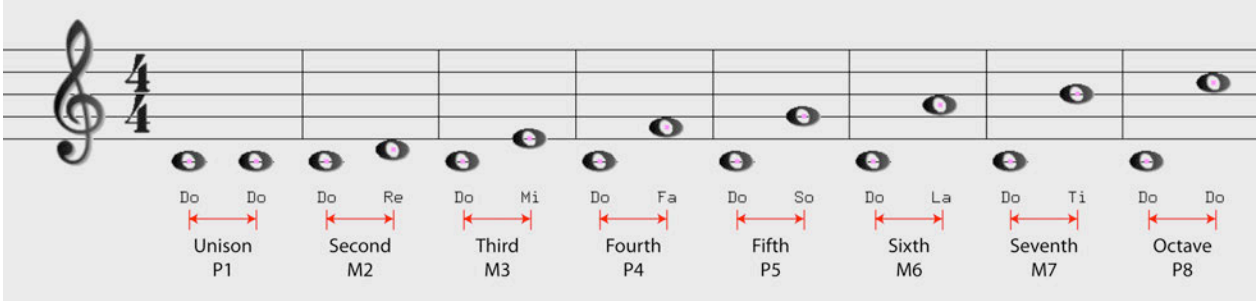
This exercise presents you randomly the notes from the whole octave (lower Do to higher Do). Try to match them.

Always start from Do

The difference in pitch between two notes is referred to as: an interval. If the two notes are played simultaneously, the interval is a harmonic interval. If the notes are played one after the other then we speak of a melodic interval.

In this exercise two notes get presented in sequence, the first is always the lower Do. The second note makes the interval.

The intervals are named for the number of staff lines and spaces they include. For the names see the text under the picture below:



The exercise does not really teach interval names, since you just sing the intervals. However, intervals are very useful for relative pitch, since they develop a sense of distance between the notes. In general relative pitch is more important than absolute pitch, since when a conductor initiates a song, he has the freedom to choose the starting pitch. The distance between the notes - the intervals - stay the same regardless of the starting pitch. The freedom of choosing the starting pitch makes sense, since in a kindergarten the voices match higher notes better than in a men's choir.

Up range 8 (eight notes)

Now you have to remember a random sequence of eight notes.

To make the exercise even more difficult you can choose "Blind Exercise", so you do not see the notes during the recording.

Old Mac Donald

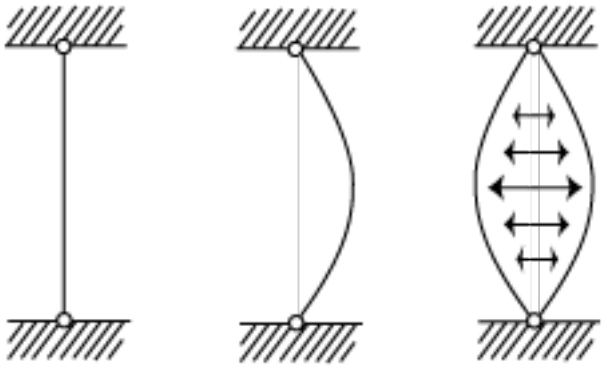
For you relaxation a well-known song: Old Mac Donald had a farm, E-I-E-I-O.

Up and down in half-steps

Have you ever wondered why our pitch exercises go from a low "Do" to a high "Do"? If you change the tessitura from high to medium, you will see that the high "Do" of the medium tessitura is equal to the low "Do" of the high tessitura. Of course the high "Do" of the low tessitura is equal to the low "Do" of the medium tessitura. In this way you can go up seamlessly from a very low "Do" to a very high "Do". But why use the same syllable for different pitches? This lies in the relationship to the nature.

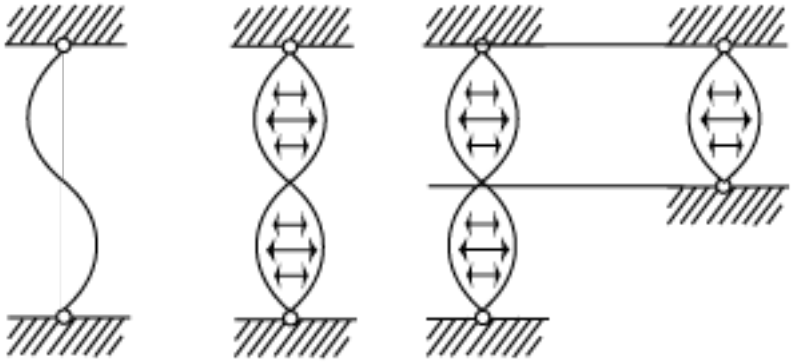
Nature is build upon the laws of physics. If you do not like physics, just skip the theoretical part of this section.

If you take a string, which is fixed at the two end-points, tear the string in the middle and let go, then the string starts to swing and make a sound:



String pulled swinging

The string will swing in its natural frequency; this is called the fundamental frequency. Since the string is only fixed at the two ends, the string may also swing at double the frequency of the fundamental frequency:



freedom of form

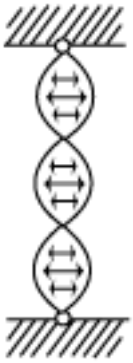
swinging with double the frequency

the same sound can be produced with a string which has half the length of the original.

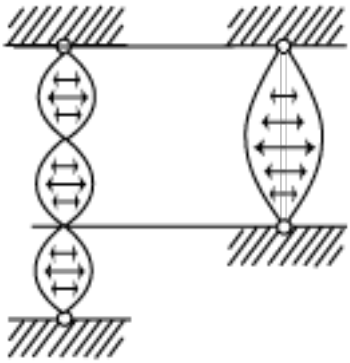
This is then called an overtone. So if you cut the string length into half, the new fundamental of the shorter string is double the frequency of the longer string.

In this way we get the low “Do” and the high “Do”. We can repeat this step in both directions: we can either half the new shorter string to get to the next higher “Do”, or we can double the length of the original string to get to previous lower “Do”.

So this explains the “Do’s”. But what about the notes in between? Again let us look at the string, and see what happens, if the string vibrates with a third of its length. The string can do this, because he is only fixed on the ends and otherwise has the freedom to move freely.



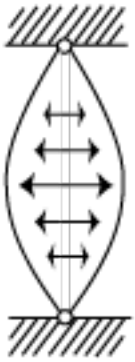
string swinging with three times of the fundamental



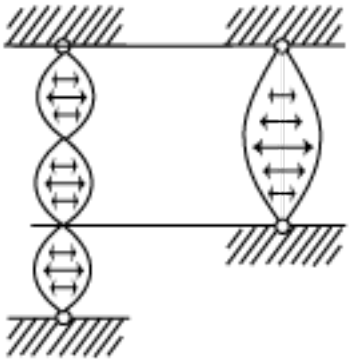
if we take a string which has two thirds of the original it will swing with double the frequency of a string which has only one third of the original string length.

Note if we take one third of the original length, the sting is shorter than only half the length, which means the frequency will be above the higher “Do”. But if we take two thirds, the frequency will fall in between the low and high “Do”. Lets make an example:

Length 1/1

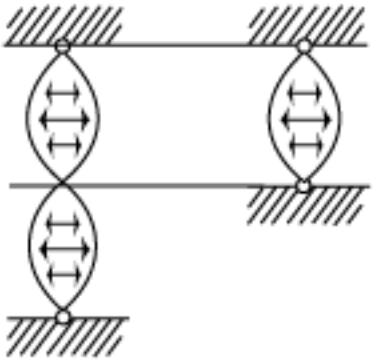


Freq 220 Hz. lower “La”



Length 2/3

Freq 330 Hz “Mi”



Length 1/2

Freq 440 Hz “La”

For this example we take the “La”, because this is the reference note, which is used in our western music. The “La” was defined to have a frequency of 440 Hz. In this way the lower “La” has a frequency of half of 440, that is 220 Hz. A string at a third of the length would vibrate three times as fast as the whole string with its fundamental of 220 Hz, that is 3 * 220 = 660 Hz. This is of course higher than higher “La” of 440 Hz. But doubling this string with a length of a third of the original length gives as two thirds of the whole string. And since this is double the length of a third, we know that the string would vibrate with half the frequency, that is 660 / 2 = 330 Hz. Which falls between the low and high “La”. Thus we have constructed our first note. No, it is not “Ti”, which follows “La”. Remember that in this example the notes would go from the lower “La” to the higher “La”. This means the scale would go from “La”, “Ti”, “Do”, “Re”, “Mi”, “Fa”, “So”, and “La”. It is also not the “Do”, it is more like two thirds between the lower and the higher “La”: it is the “Mi”, which we constructed. This is the fifth note if we start counting from “La” with a one. Later we will see that this is called the dominant of the tonic.

All the notes of a scale can be constructed with this common natural behavior of a string. The dominant overtones that we get in a similar way (e. g. length of 3 / 4 --> 220 * 4 /3 = 293.33 Hz (“Re”)), will give us the rest of our scale.

But it gets even more complicated, if you look up the frequency of the "Mi" which corresponds to the E4 note on a piano you will see that the E4 on the piano swings with 329.63 Hz instead of our calculated 330 Hz. Even so the reference note "La" on the piano A4 will swing exactly with 440 Hz. This is not an error: this is a compromise. We speak of the so-called tempered scale. The tempered scale allows us to transpose a melody. That is we can start a song from any note and are still able to play it on a fixed key instrument, like the piano: The distances from note to note - or intervals - will stay the same. If you are a natural talent and sing with the exact pitches of the overtones, instead of the tempered scale's pitches, even better! The program will accept differences up to the set "Pitch Sensitively" level as correct, which is by default above those small differences.

After we have constructed our scale, let us look at the frequencies (standard tempered frequencies):

Solfege Note	Note Name	Frequency	Growth factor from previous frequency
Do	C5	523.25113	1.05946309
Ti	B4	493.88330	1.12246205
La	A4	440.00000	1.12246205
So	G4	391.99544	1.12246205
Fa	F4	349.22823	1.05946309
Mi	E4	329.62756	1.12246205
Re	D4	293.66477	1.12246205
Do	C4	261.62557	

You have to read this table from the bottom, lower Do, to the higher Do.

Since the intervals are more important than the absolute pitches, we take a closer look at the change of the frequency from one note to the next higher. Because the perception of sound is logarithmic, we do not look at the simple difference, but on the growth factor of the frequency. Logarithmic, because if you assume that the low A1 with 55 Hz has some similar characteristics with the higher A2 (110 Hz) and this again has some similarities with the even higher A3 (220 Hz) and A4 (440 Hz) and so on, then you see that the frequencies get doubled and not just added (see before physics of strings). The growth factor is the frequency of the note divided by the frequency of the previous note (e. g. for "Re" it is 293.66477 / 261.62557= 1.12246204).

Interesting, we see that the factor for almost all notes is 1.122462. Two notes have a smaller factor of 1.05946309. If you multiply 1.05946309 with itself you get: 1.05946309* 1.05946309= 1.12246203. What does this mean? The two notes with the smaller factor only have half the distance of the other notes. If we name the distance between "normal" notes a step, then these two notes are only separated by a half step. In an equal tempered scale the octave is divided mathematically into twelve half steps. As we have seen this dos not exactly match the natural overtones of a string, however the deviation is usually not noticable. But the mathematically equal distance between half tones allows an easy transposition of a musical piece by any number of half steps up or down.

Now, we are finished with our physics theory: we have reached the half step.

If you did not understand the above excursion, do not worry, there is no need to understand the physics behind music, to make good music. But you should know the music terms: The notes "Do" and "Re" are one step apart. So are "Re" and "Mi", but "Mi" and "Fa" are only a half step apart. Let us look at the whole scale and the distances between the notes:

Note	Do		Re		Mi		Fa		So		La		Ti		Do
Distance in steps		Step		Step		Half Step		Step		Step		Step		Half Step	

When looking at modes of scales, we will come back to this table.

For now, we introduce additional notes, between the notes, which are a step apart. In this way we get a scale that consists of notes which all are a half step apart. The newly introduced notes just have an "i" at the end. The whole scale with all the half steps reads then like this (the new notes are fat):

Do, **Di**, Re, **Ri**, Mi, Fa, **Fi**, So, **Si**, La, **Li**, Ti, Do

Now, there are twelve notes. But how do we put them on our staff? The "normal" notes already occupy the lines and spaces. The musicians have created three symbols to deal with the half steps: they are called accidentals:

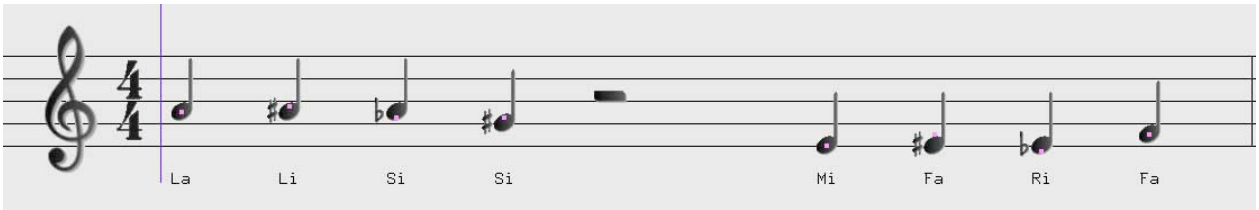
Sharp Flat Neutral

The sharp raises the notes on the line or space where it is placed by a half step.

The flat lowers the notes on the line or space where it is placed by a half step.

The neutral cancels the above symbols, so the notes on a line or in a space have the original value again.
Listening Singing Teacher will always (except neutral) place the symbols in front of the notes, so you do not have to remember that this line or space was raised or lowered. Vice versa, if there is no symbol in front of a note the standard value should be taken. However, there is an exception, Listening Singing Teacher will not place an accidental in front of a note if the Key Signature contains sharps or flats. Key Signature will be discussed later.

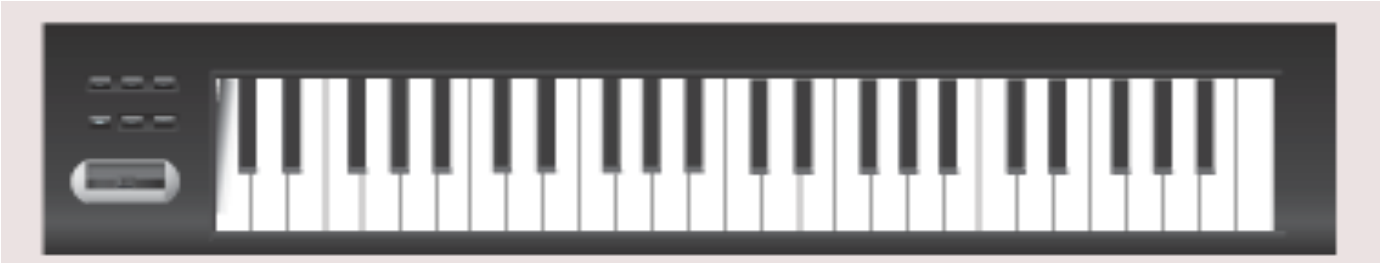
In addition to the accidentals, Listening Singing Teacher will show you the pitch, which you must sing in a form of a red dot. If the note is raised or lowered with an accidental the red dot will no more be in the middle of the note, and gives you a hint at which level your pitch has to be. If you raise the note “Mi”, then you get the note “Fa”, because the note “Mi” and “Fa” are only a half step apart. In this case the red dot will be above the note, the red dot is where the “Fa” has the middle point.



Note that the notes “Li” and “Si” have the red dot not in the middle, but raised and lowered. A raised “So” becomes a “Si” and has the same value as the lowerd “La”. Also realize that the raised “Mi” has the dot at the same place as the “Fa” at the end.

In this exercise you will simply go up and down the scale in half steps. Until now we have used only notes, which correspond to white keys on the piano. Now you will sing all the notes, including the black keys, which represent the newly introduced notes.

Di Ri Fi Si Li Di Ri Fi Si Li Di Ri Fi Si Li Di Ri Fi Si Li



Mi Fa Ti Do Mi Fa Ti Do Mi Fa Ti Do Mi Fa Ti Do

A glimpse at the piano also reveals us, why there is no black key between “Mi” and “Fa”, and between “Ti” and the high “Do”: these notes are already only a half step apart, therefore there is no room for a black key. Or otherwise we would introduce quarter steps, which are not really used in western music. However, the voice is a continuous instrument that allows us to sing all pitches between the notes. Thus this can be used for special effects, but keep in mind that the twelve prevailing “natural” overtones of a fundamental map our harmonic understanding best.

Happy Birthday

Well, actually the tune is derived from Happy Greeting or Good Morning. But we took the opportunity to thank the creators of Felix The Cat to congratulate then for the fact that after 25 years of the existence of this famous cartoon character they did not protect it and released it in this way to the public. This was really a happy morning, we think of it as the important 25th anniversary of Felix the Cat.

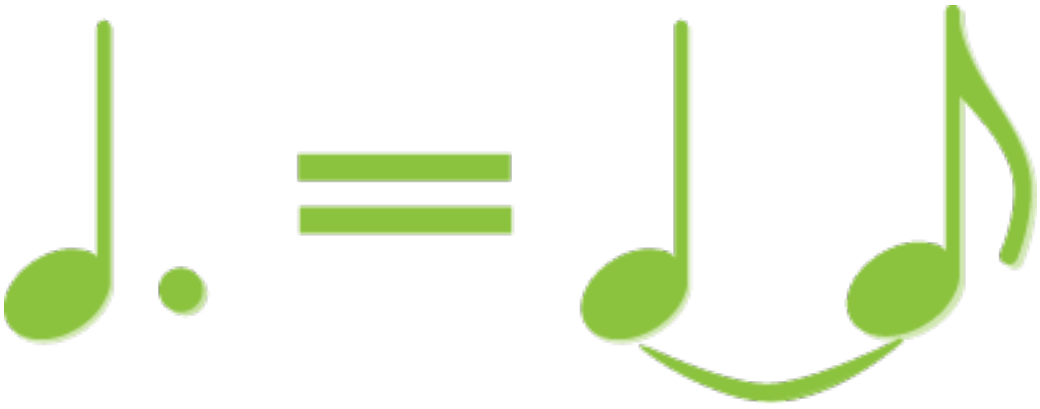
This song has at the beginning a “short” measure, which consist only of the duration of a quarter beat. This is called an anacrusis or pickup measure. Accordingly, the count off will end before the anacrusis starts: in this song it means that Felix will only count to two before the piece starts with a count of three. A piece of music beginning with an anacrusis will often end before the last beat of the last bar, in order to keep the number of bars in the entire piece at a whole number.

Happy Greeting, Good Morning or Happy Bitrhday: You may sing whatever lyrics you can remember. If you have a life expectancy of 200 and more years you can dig the web and read the whole story.

Dotted notes, ties and slurs

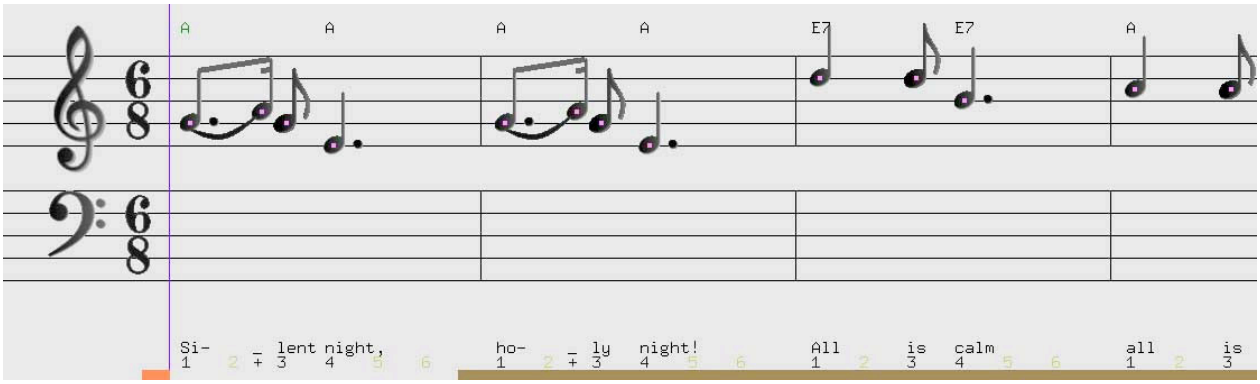
How do you represent a note, which should have a duration of a quarter and an eighth note? You make a quarter note and an eighth note? No, because this you would play on a piano as two separate notes: a quarter note and an eighth note of course. For notes, which belong together, the musicians use a tie. A tie looks like a flat bow, which connects the notes together, which should sound as one note. Thus the following notes are played just as one note, but have the duration of the two notes together (in this case a quarter and an eighth):

Since in music it often occurs, that a note is half the value longer than its original value, music notation allows a simplified depiction of this situation. Instead of making two tied notes, they add a dot at the end of the note. This makes the note half of its original value longer. Thus the following notation is the same as the version with two tied notes.



With ties you can tie together all note durations. For example you can tie a half note with an eighth note. The dot notation only allows you to extend the note by half of its value. Thus, a dotted half note for example has the duration of a half note and a quarter note.

Slurs are similar to ties, but they connect two or more notes of different pitch. The idea behind slurs is to move as smoothly as possible from one note to the next. This is the case when you have to sing one syllable over two notes, like in “Silent Night”. The si in si-lent night goes from a lower note to a higher note, without interruption. As a singer you usually sing them in a continuous breath.



This is a rhythm exercise with dotted notes. The above picture of silent night contains 16th notes; we will look at “Silent Night” after we introduce the 16th notes.

Oh when the saints

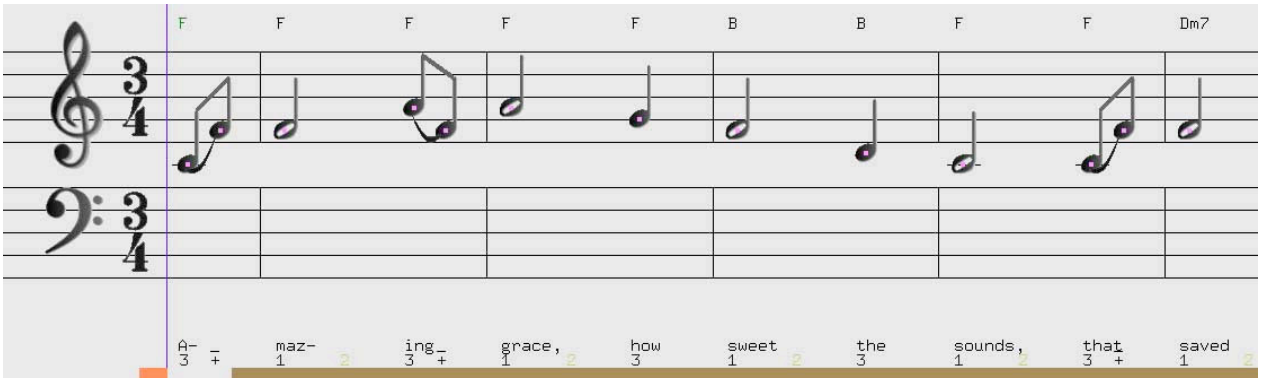
This song contains a dotted note. Remember to hold the note long enough.

My Bonnie

This is a very popular song, which has dotted notes and ties. As you can see the ties may span measures. This means that you have to hold the note from the beginning until into the new measure. Do not forget to count correctly with your inner beat.

Amazing grace

In this song we use another way to depict eighth notes. If two or more eighth notes follow each other, then you can beam the notes instead of making notes with flags. There is no difference between the two notations. All notes, which are beamed, are eight notes. In the picture below the first and the second note is an eighth note. Usually when the notes belong together, the notes get beamed, instead of flagged.



The song in this exercise has slurs. Right at the beginning there is a slur. You have to start with the first lower note and then go up to the next higher note without interruption. The two notes are sung as one syllable. Here it is the beginning A of Amazing, the lyrics line has underlines to denote the cohesion. The program will evaluate any pitch between the first and second note as correct.

Sixteenth Note

The sixteenth note has an additional flag to the eighth note and looks like this:

As you may have already guessed, the duration of the sixteenth note is half the time of an eighth note, or a sixteenth of a whole note.

As with eighth notes, the counting slides in the additional letters e and a between the eighth notes. A measure full of sixteenth gets counted as follows:
One e and a **Two** e and a **Three** e and a **Four** e and a **One** … .

It takes some time to practice. Keep practicing until you feel comfortable and you can do it effortlessly. Rhythm is a basic concept of music. Our ancient ancestors already used percussion instruments to express their moods.

Clementine

during the time of the California gold rush, a popular song was Clementine, which contains sixteenth notes.

What shall we do with

Fast song, with sixteenth notes.

Rests other than a quarter

Until now we only have used quarter rests:

Of course a rest can be an eighth rest, a sixteenth rest, a half rest or a whole rest. The symbols for the rests are as follows:

Sixteenth rest Eighth rest Half rest Whole rest

The symbols for the half rest and the whole rest look very similar. Here is a small help to distinguish them: the half rest is above the line and thus looks like a hut. Both half and hut start with an h. The whole rest is below the line.

The dot notation, which prolongs the note by half of its duration, is also applicable to rest.

In music notation the rests have fixed locations. Listening Singing Teacher puts the rest on the height of the last note. This makes it easier to see the rest, since it is in the flow of the other notes.

Silent night

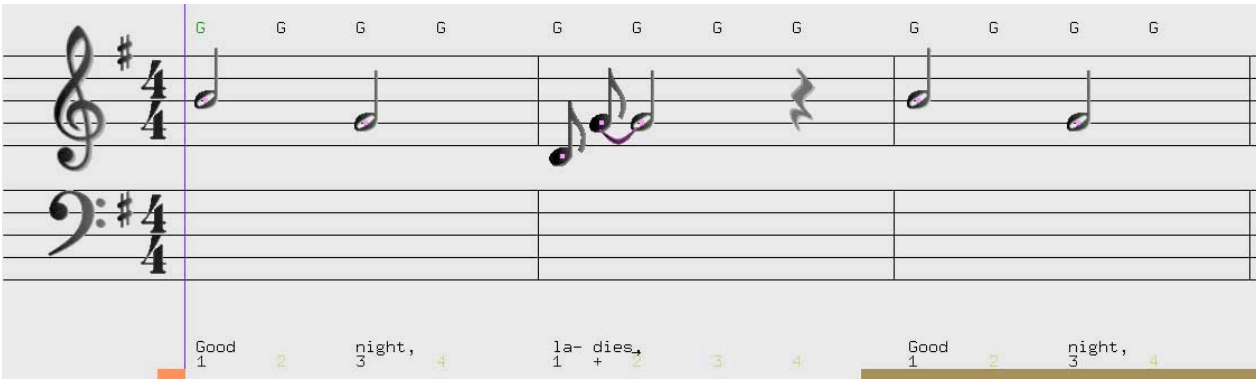
Well-known Christmas song. This song has a time signature of 6 / 8. Why not 3 / 4? The measure in both cases is three quarters long anyway. However, the traditional practice is that musicians often count 6 / 8 different. Especially if the tempo is fast, instead of counting to six they only count to two. This would be then equivalent to a time signature of 2 / dotted quarter note. But there is no time signature with a dotted quarter note in the denominator. You could write the time signature as 2 /4 and then use triplets (see later) and get the same effect. However, writing the whole piece with triplets does not make it easy to read. Therefore the musicians compromised and "misuse" the time signature of 6 / 8 to mean 2 / 4 with triplets. When you look at the piece you also see that there are only two guitar chords per measure. Which reflect the idea that the beat is really a dotted quarter note, or a time signature of 2 / 4 with triplets. Usually the counting is done like triplets, but instead of one – trip – let, it is counted like this: **one** - and - a, **two** - and – a, **one** - and - a, … . Note that the numbers are fat, which represents the metric accent. Unfortunately, Listening-Singing-Teacher does not break with the mathematical rules, so the counting hints, may not apply for time signature of 6 / 8, even so they are correct.

Jingle bells

This is a very popular Christmas song, which accentuates the rhythm more than the very old traditional songs. Sing with rhythm in your voice.

Good night ladies

In this lesson we introduce the key signature. The key signature follows right after the clef, and before the time signature (see below). Instead of having an accidental in front of all the notes, which are raised, we put a key signature at the beginning. This also better reflects, the key in which we sing. The key of this song is G and has one sharp. By adding a key signature, you lower or higher all the notes, which are on a space or line, where the key signature has accidentals. The accidentals in the key signature are valid on all octaves. This means, that although there is only one accidental depicted for the upper “Fa” the accidental is valid for all “Fa’s”. The accidentals in the key signature are valid throughout the whole piece; no separate accidentals will be shown before those notes. With a neutral you can cancel this influence.



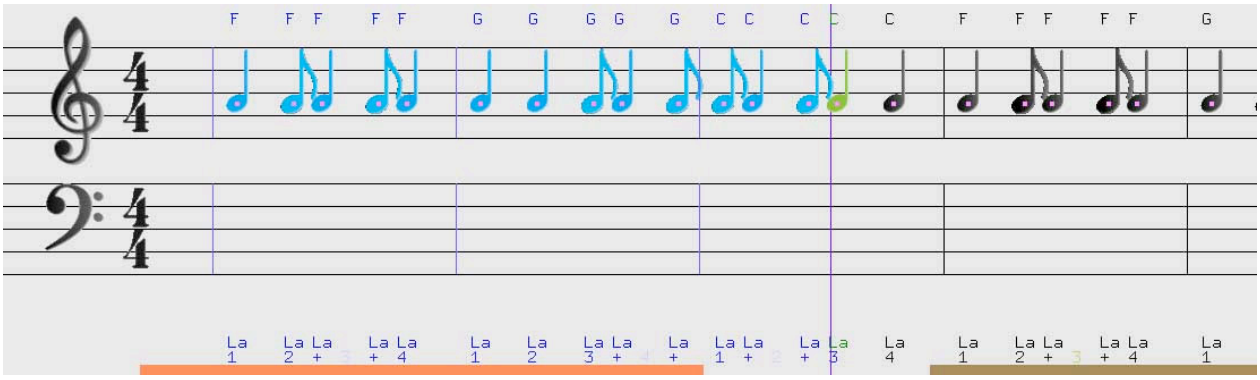
Every “Fa” is raised by half a note, thus sung as a “Fi”. If the key signature contains flats, then the notes get lowered by a half step. In the real solfege world the lowered “Ti” would be lowered to a “Te”, “La” to a “Le”, “So” to a “Se”, “Mi” to a “Me” and “Re” to a “Ra”. However Listening Singing Teacher does not yet support those syllables. In a tempered scale “Li” and “Te” are identical in pitch, so from a pitch view it does not matter, but for a deep musical understanding it would be better to sing the lowered syllables.

Even so you do not see the accidentals in front of the notes, the red dot, will guide you to the right pitch. In real music notation you will not find any red dot, you always have to be aware in which key the music is written. This makes sense, since the theory behind harmonics is based on scales and key’s. Go back to the lesson “half steps”: singing in another key means nothing else than that the string, which is used to build the scale, has a different length and thus has a different fundamental.

Syncopation

Up to now, we have tried to stay in sync with the beat. Modern music like the beat emphasizes the offbeat. Emphasizing can be done by omission: Instead of having a loud sound, you have no sound, or at least no sound starting, when you normally expect one.

Until now, we started a sound when the beat was due, the number counting. Sometimes when we had longer notes than a beat, we did the counting in our head. But the longer note always started on a beat. A measure is syncopated, if it contains notes, which start off beat and last over the beat to the next offbeat. Sounds complicated, let us take a look at syncopated measures:



In the first measure the quarter starts on the beat. The following eighth note is also on a beat. The next note is a quarter note which starts offbeat (see the + in the counting hints) and lasts until the next offbeat (+). The three gets only counted in the head. The following eighth note synchronizes us again with the beat, so that the last quarter in the measure is on the beat again.

All three depicted measures are syncopated, the first leaves out the three, the second the four and the last leaves out the two. In the next exercise you will see that you can also let out the one by tying notes over a measure bounding, then the one gets left out.

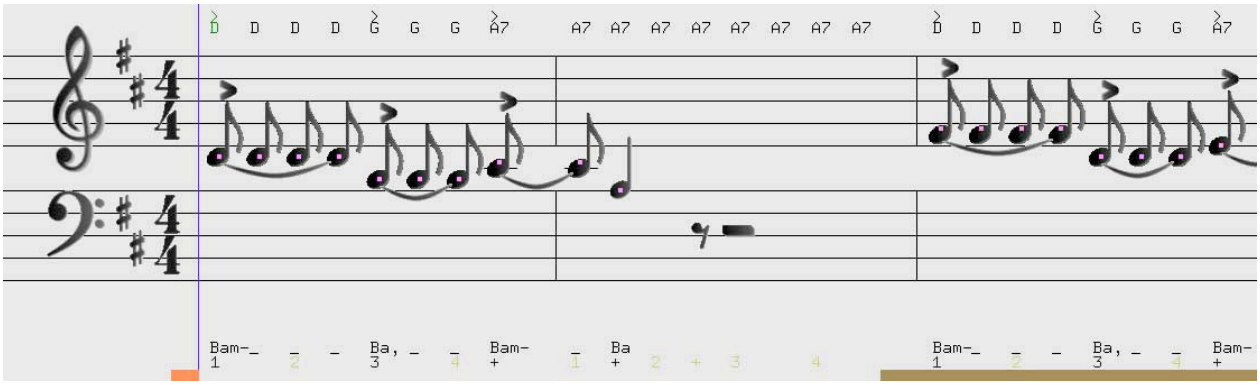
Try to clap the exercise, which contains syncopations. To get you started with the counting, the first two measures of the exercise are note syncopated.

Rhythm: La Bamba

Syncopation can also be done directly: by accentuating an offbeat note. Usually the notes in 4/4 rhythm are accentuated as follows: **one** two **three** four **one** two **three** four. The underlined fat counts are stronger than the fat counts, and these are stronger than the normal written counts. The notes in a 3/4 rhythm emphasize the One: **one** two three **one** two three. In modern beat, the accompaniment uses a different accentuation rhythm: one **two** three **four** one **two** three **four**. This effect can of course also be used in the lead voice to stress a different mood. Everything is allowed in music, as long as it sounds good to you and it portrays what you want. But keep in mind that other people may - based on their experience - interpret or understand things differently.

This is a well-known folk rock from south America. In this exercise you do not have to sing or

clap, this is a loudness exercise. You have to emphasize the notes in the right way: syncopated.

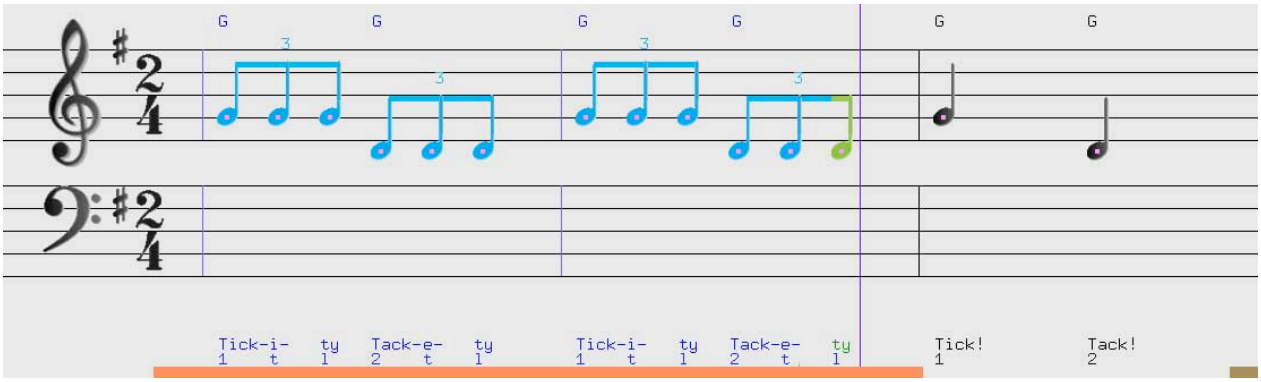


Although, the first four eighth notes could be written as a half note, they are purposely not. Your task is to emphasize the first eighth note and then lower your voice to get the typical rhythm of this beat. The last eighth note of the first measure gets also emphasized and holds over the bar into the next measure, however, only the last eighth note in the previous measure gets emphasized. The next measure then continues with an offbeat quarter, which is emphasized only by the offbeat position. To get the maximum of points hold the offbeat quarter as long as you should: namely a quarter.

You should practice this exercise until the rhythm of the offbeat goes into your blood. Don't be satisfied with a few points. Repeat the exercise until you get enough points and you can hear and drum the accentuations by heart.

Triplets: John Smith

A last music concept will be introduced in this lesson: Triplets. Triplets have three notes with the same duration, but you do not play them as long as they should be played, namely three times the duration of one note. Instead, Triplets are played in the time of the duration of two notes. So for example, a triplet of three eight notes is played in the time of two eighth notes.



You can recognize a triplet by the 3 above the beam. Beware that a measure in the above example has the length of only two quarter notes or four eighth notes.

You count the triplets as follows: **One**, trip, let, **Two**, trip, let and so on.

Be aware that this song has a key signature with raises all “Fa’s” to “Fi’s”.

Going up with first note only

In this exercise you only hear the first note of the exercise. You must construct the other notes with your mental ear, from memory.

You can also use this technique in previous exercises, to train your memorizing. In the Exercise Options choose “FirstNoteOnly” from the Assitance Voice Menu.

Going down with first note only

This is like the previous exercise, but you have to construct the notes going down. Which is harder, because we usually did the exercises going up.

Pushing the limits up

In this exercise you start from a low note and then go up to the highest “Do”. You do this slowly, that is you go up the scale with three notes, before going up to the next higher three notes. Set the option “Repeat on Miss”, so you can repeat the exercise with the notes, with which you have difficulties.

Do not stress your voice. If you cannot reach a note, do not force you to try and try. Stop the

exercise after a few misses. Only go to the note which you can reach sometimes, and sometimes not. With this exercise you should be able to reach the note more often and eventually you can always reach the note. Keep in mind that physical limitations do not allow all people to sing all notes. It is very unlikely that your voice spans four octaves. It is like with “to do the splits” you have to start training early in your childhood, but even then as you grow things may change.

If you seriously want to increase your voice range, consult a real teacher. Do not abuse your voice with this program. The main purpose of this program is to learn to sing and not to extend your voice range.

Accept your limits. Most hit songs do not ask for a super soprano voice. Singing should be fun and not a stressful activity.

Pushing the limits down

This is a similar exercise as the previous one, but goes down instead of up. Here the physical limitations are even more restricting than with the up going exercise. This is because the upper notes you sing with a “head” voice, and the lower notes come from the belly. If you are completely relaxed when you sing the lowest note you can sing, then this is your limit.

Up from a reference note

This is a simple exercise, which trains your relative ear. By not giving the first note as a reference, but always the reference note “La”, you must prepare your voice with your inner ear to start relative to this reference note.

Again, you can apply this mode to other exercises by choosing Assistance Voice “ReferenceNote”.

To make this exercise even more challenging, you can transpose the scale. In this way you get different starting pitches.

Down from a random reference note

This exercise is the same as the above exercise, but does give you an arbitrary note as a reference. You see and hear the random refernce note, before you start singing the note you should sing. This exercise forces you to recognize the note and then internally calculate the relative distance to your note, not always from a fixed reference note, but from a variable reference note.

To make this exercise even more challenging, you can choose “RandomRefNote” from the voice assistance menu (should already be set) and in the “Count-Off” menu choose “withRefNote”. In this way you will hear the random reference note during the first beats of the count off. As soon as the exercise starts, the random reference note will be displayed, and you can compare the note displayed, with the note you thought the random reference note is. This is an excellent exercise to train the absolute pitch.

He is a jolly good fellow

For He's a Jolly Good Fellow is one of the most popular songs in the world. The melody originates from that of the French song „Marlbrough s'en va-t-en guerre" (Source: Wikipedia).

Some more theory

Congratulations! By the time you came here, you have learned to master your voice. You know your voice range, and you should be able to match any note in your voice range. This is a good foundation. You know that you can sing most of the songs and stay in tune. However, some songs do not live from sustained and "correct" pitches, instead they whisper words, or have a lot of vibrato in the notes, or have a rough, breathy and broken voice, which make the songs interesting. So there is no "wrong" pitch, you have to make your audience curious, so they listen to you. But "real" singing, where people can sing along the song, benefit from a natural joy. Singing (maybe also shouting) can free your mind and give you self-confidence. Studies have shown, that singing is also healthy.

Even so you have a good foundation: you know the note durations, pitches, and how to emphasize notes with loudness or syncopation, this is only the start. When we did the half step exercise, I said that we will come back to the following picture:

Diatonic Scale

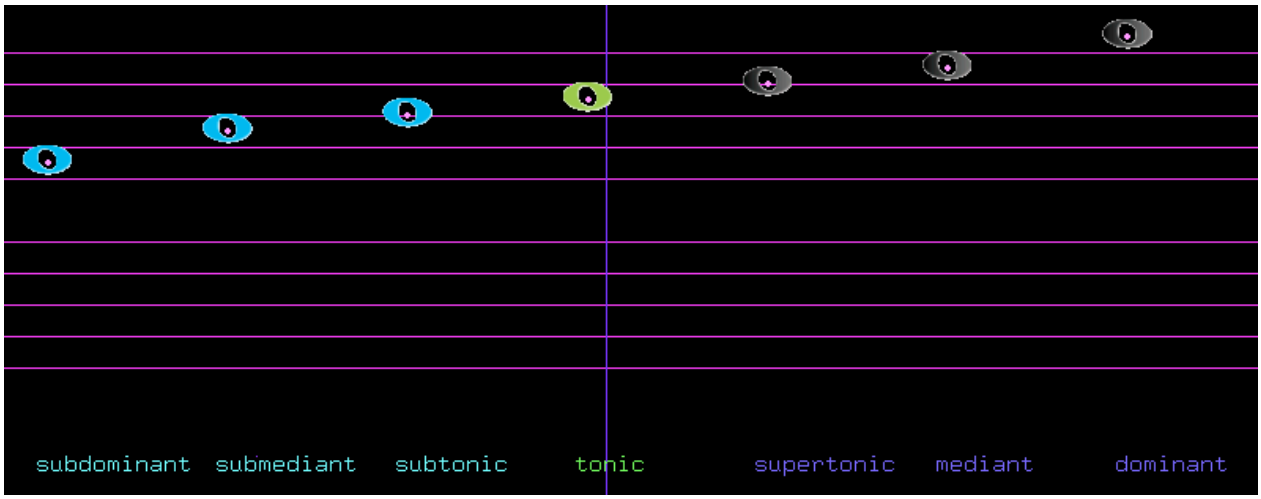
Note	Do		Re		Mi		Fa		So		La		Ti		Do
Distance in steps		Step		Step		Half Step		Step		Step		Step		Half Step	

This is the scale with which you are familiar. It is called the Diatonic Scale in C Major. It consists of eight notes, which are called degrees (read table from bottom to top):

Solfege	Notename	Scale degree	Degree name	Meaning
Do	C5	8	Tonic	The high Do
Ti	B4	7	Leading or subtonic	The piercing tone
La	A4	6	Submediant	The sad tone
So	G4	5	Dominant	The bright tone
Fa	F4	4	Subdominant	The desolate tone
Mi	E4	3	Mediant	The calm tone
Re	D4	2	Supertonic	The hopeful tone
Do	C4	1	Tonic	The strong tone

The Scale is called diatonic, since it contains half steps and whole steps, thus two different distances from note to note (dia is from Greek and means two).

The first note of any scale is called: the tonic. If we put the tonic in the center we can easily see the logic behind the degree names:

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|               |               |----------tonic----------|               |               |
|               |---------------------------mediant-------------------------|               |
|-------------------------------------------dominant-------------------------------------------|
```

Chromatic Scale

The scale in the half step exercise, where the scale is built with all the half steps, is called a Chromatic Scale.

Pentatonic Scale

There is another scale, instead of adding half steps, the scale removes tones which are less than a step apart. And thus leaves only five notes. Hence it is called a Pentatonic Scale (penta is from the Greek and means five). The Pentatonic Scale in C Major looks like this:

Note	Do		Re		Mi		So		La		Do
Distance in steps		1		1		1 1/2		1		1 1/2	

Note that the distance between “Mi” and “So” is one and a half step. The same is true for “La” and “Do”.

Modes

As you can guess from the word C Major, there is also a C Minor. A mode is just an arrangement of notes in a specific pattern of whole steps and half steps. If we start our eight note scale from “Re” to “Re”, the arrangement of the whole and half steps is different. The first half step is no more between the third and fourth note but already between the second and third:

Note	Re		Mi		Fa		So		La		Ti		Do		Re
Distance in steps		Step		Half Step		Step		Step		Step		Half Step		Step	

This mode is called the Dorian mode. It keeps the locations of the whole and half steps of the C Major, but is starts from a different degree. As you can imagine there are many possibilities, you can even change the locations of the whole and half steps, which gives us even more possibilities. All scales have specific names. The main purpose of this program is to give you feedback, on where you stand. Therefore we will not go deeper in this theory. Add-ons or later versions of Listening-Singing-Teacher may contain exercises, which train your ear to hear the modes and name the corresponding scales.

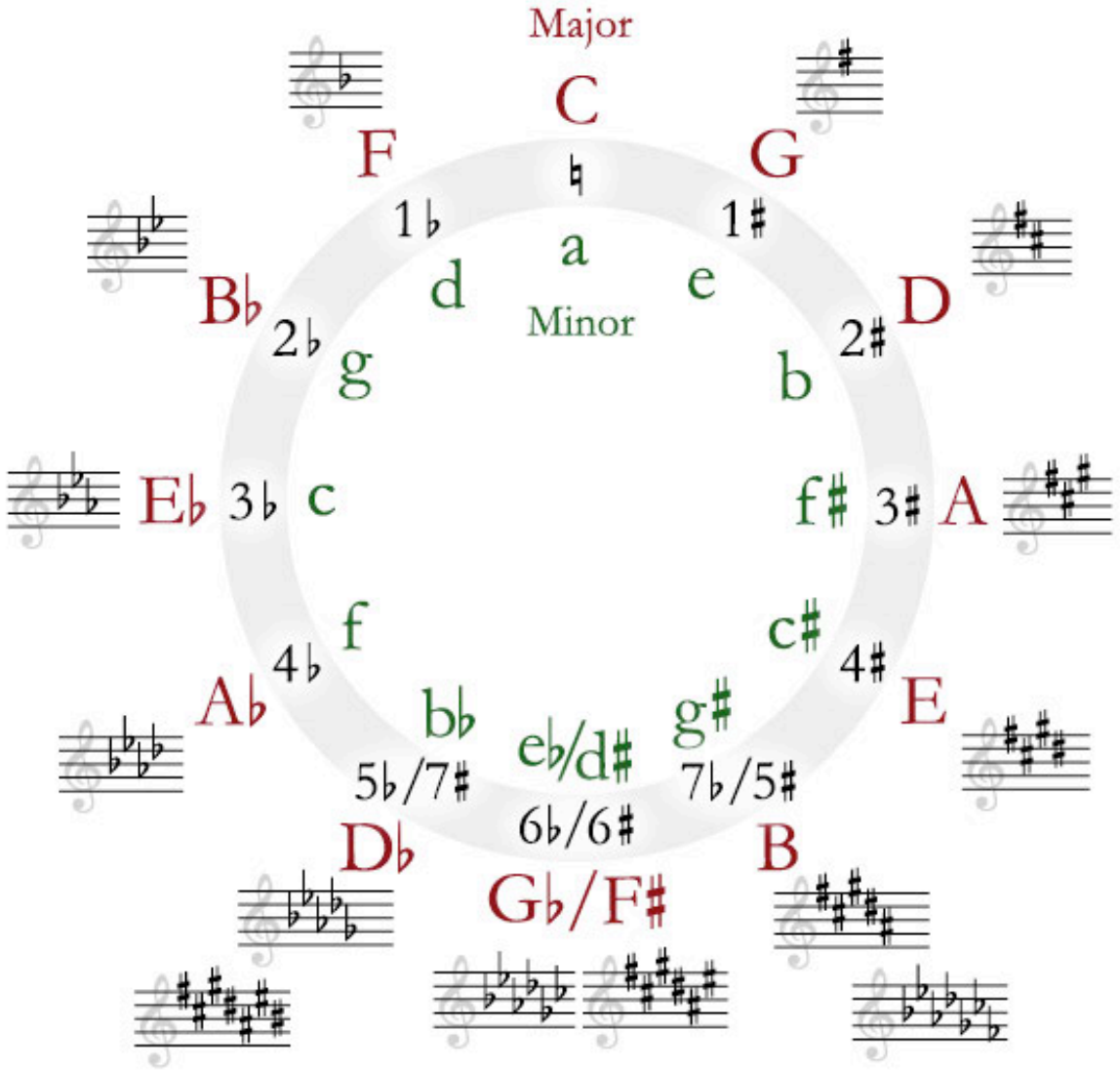
Key signatures

Well, we will do some more theory, just to be sure you did not over read the above sentence: The Dorian mode keeps the locations of the whole and half steps of the C Major scale, but starts from a different degree. Why did I say degree and not fundamental? Let us go back to the theory of strings. If we construct a scale and take the "Re" as our starting string length, then "Re" is our fundamental. If we construct our prevailing overtones, we will get the following scale:

Note	Re		Mi		Fi		So		La		Ti		Di		Re
Distance in steps		Step		Step		Half Step		Step		Step		Step		Half Step	

Which looks quite different than the Dorian mode of the above C Major scale, which has a tonic of "Re". This one has a fundamental of "Re". So do not confuse tonic and fundamental! The construction of the prevailing notes, will always give us the same distances of the steps. This behavior is founded in the nature of physics. As you can see, the half steps are on the locations between the third and fourth note and between the seventh and eighth note. But to depict the scale we must use two sharps! In this case we have constructed the D Major scale. The D Major scale has the "Re" as the fundamental note. If the conductor starts a song from a different note than usual, lets say from D ("Re") instead of C ("Do"), then he changes the key signature and not the mode. All the distances of the pitches (intervals) will stay the same. Again this shows us the importance of relative pitch. You do not have to understand the physics and theory behind the music, if you know to sing a song in one key signature; you just have to transpose the notes relative to the starting note. The intervals will stay the same, and you will be singing in tune. Even so you may not be able to tell in which key you sing, nor name the notes.

A last remark about key signatures: adding one sharp to the key signature raises the fundamental to the dominant (or fifth degree) of itself. Remember that the key signatures span over all octaves, in this way we do not strictly speak about a new scale, which starts from this higher note, we could also start an octave lower. Adding sharps until the key signature becomes the starting key signature again brings us to the circle of fifth.



Circle of fifth (This above picture is from wiki pedia).

Chords

But there is even more to come: What if we play more than one pitch at a time? This gives us a chord. A chord contains two or more pitches. A chord of only two notes is a special case: it is often looked at as an interval. Since the human vocal system cannot produce more than one pitch at a time, we have to deal with chords similar to the intervals: We have to sing the notes in succession. This is called a melodic or arpeggiated chord, in contrast to the harmonic chord, where the notes are played simultaneously.

But why bother about chords, if we cannot sing more than one note at a time? Because chords give us the fundamental feeling for music styles. Add-ons or later versions of Listening-Singing-Teacher might teach chords, chord inversion and chord progression.

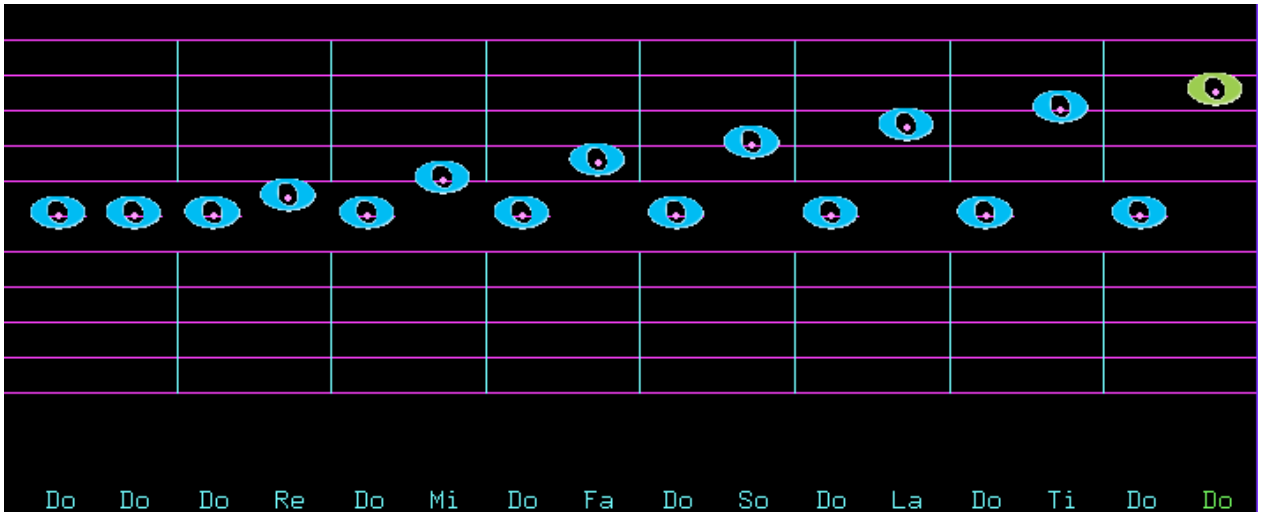
Where to go from here?

Because the possibilities are endless, the program contains the possibility to create your own exercises. You can write pentatonic scales, arpeggiated chord exercises or whole songs. However, the tools are limited and must be used carefully.

The possibility to make your own exercise is described in a separate chapter “making your own Exercise” towards the end.

Ear-Training: Intervals

Remember the exercise “Always start from Do” ?



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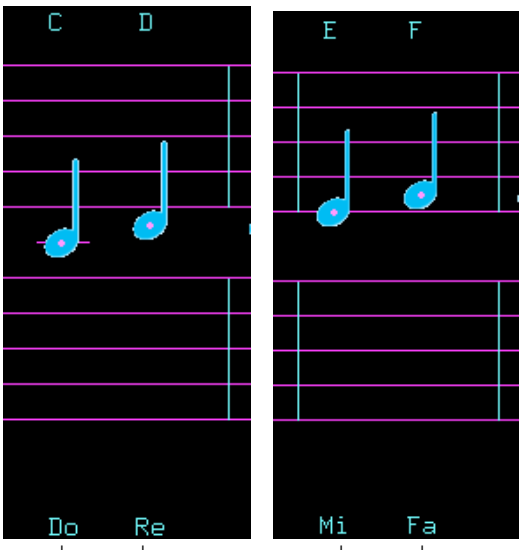
Unison Second Third Fourth Fifth Sixth Seventh Octave

The second interval that goes from Do to Re (or C to D) a is called a “Second”. This is because it includes a note on a line and a note on a space. One and one makes two. Now, let us look at a the Second which starts from Mi (or E) and goes to the Fa (or F). This is also a Second, since it contains also a line and a space.



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Interval Name	Major Second	Minor Second
Abbreviation	M2	m2
Halfsteps	2	1

Now let us look at the number of half steps (or semitones) which are between the notes:

The first interval from C to D embraces two halfsteps. The second interval from E to F embraces only one halfstep. To distinguish the intervals we must use the full interval names:

A Minor Second contains one halfstep
A Major Second contains two halfsteps

Nomenclature is something we have to learn. If nothing is specified a Major is assumed. There are even more names to express the same intervals: Enahrmonic intervals span the same number of semitones. So an augmented Unison is the same as a Minor Second (one halfstep) and a diminished Third is the same as a Major Second (two halfsteps). The terms perfect, major, minor, augmented and diminished are used to express the "interval quality". The following table shows the relationship between the names and the number of halfsteps:

Number Of semitones	Name	Abbr.	Enharmonic	Abbr.		Inversion
0	Unison	P1	Diminished second	dim2		P8
1	Minor second	m2	Augmented unison	aug1		M7
2	Major second	M2	Diminished third	dim3		m7
3	Minor third	m3	Augmented second	aug2		M6
4	Major third	M3	Diminished fourth	dim4		m6
5	Perfect fourth	P4	Augmented third	aug3		P5
6	Tritone	TT	Augmented fourth or Diminished fifth	aug4 or dim5		TT
7	Perfect fifth	P5	Diminished sixth	dim6		P4
8	Minor sixth	m6	Augmented fifth	aug5		M3
9	Major sixth	M6	Diminished seventh	dim7		m3
10	Minor seventh	m7	Augmented sixth	aug6		M2
11	Major seventh	M7	Diminished octave	dim8		m2
12	Octave	P8	Augmented seventh	aug7		P1

Confused? It gets even worse (but do not worry we will keep it simple):

The name of an interval cannot, in general, be determined by counting semitones alone. For example, there are four semitones between **B** and **E ♭** , however this interval is a diminished fourth rather than a major third (The interval between B and Eb is by definition a fourth, since it contains 2 lines and 2 spaces.); a relatively rare interval and one which does not appear naturally as part of the Harmonic minor scale. In Equal temperament, as on a piano, these intervals are indistinguishable by sound, but the Diaotonic function of the notes incorporated might be very different.

To keep it simple the following ear training lessons stick to the number of halfsteps. Your task will be to sing a note for example four halfsteps lower than the starting note (which is the same as to sing a diminished fourth or a major third lower). Since the sounds are indistinguishable on a piano, we simply stick with the number of halfsteps (at least in the beginning) instead of the musical terms, which only add an additional obstacle by the different names.

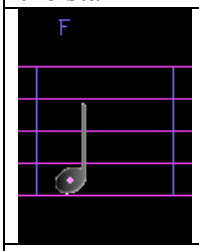
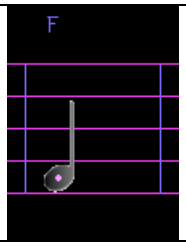
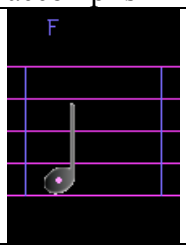
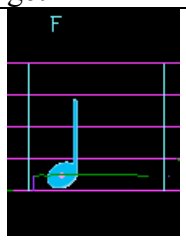
What we will learn is to recognize the number of semitones between two notes. And yes if you have mastered that you can be proud, since you can recognize the number of semitones between notes: your ear has done a perfect job. The naming is just a little bit more complicated and depends on the starting note. So do not yet bet on the correct naming of the interval but on the number of semitones between the notes, Unless of course you can also determine the starting pitch and calculate the number of spaces and lines between the notes in your head.

Ear-training exercises

Listening Singing Teacher has a very simple approach: See the note on the staff - listen to the note - sing the note - get guidance where to go. For ear training the step “listen to the note” gets replaced by listen to a reference note. And the step “sing the note” gets “build an anticipated note with your inner ear and sing the note”. The feedback shows you where you went and where you should have gone.

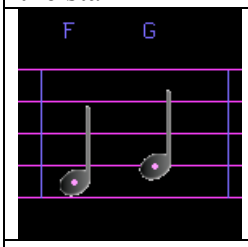
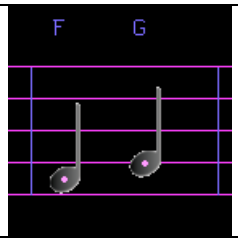
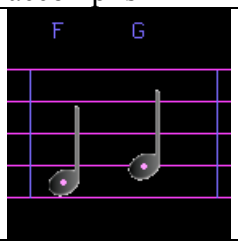
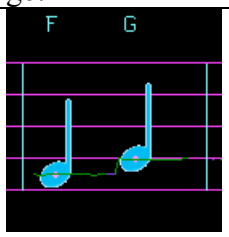
The following tables show the slow rise of difficulty level and what you learn during the process (interval sample shown: second going up from Fa (F) to So (G)):

Difficulty level 1:

What you see on the staff	What you hear	What you try to accomplish	Feedback you get	What you learn
				
The note to be sung	The note to be sung	Repeat the note you just heard	The pitch you produced in relation to the target note	Get control over your voice

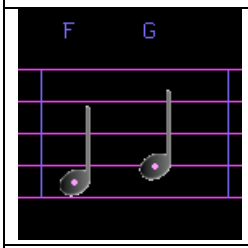
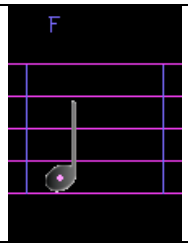
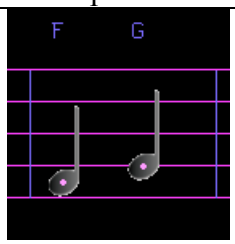
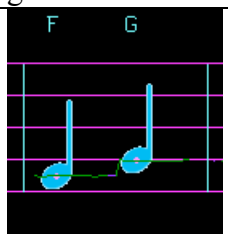
This level corresponds to the lesson 2: You see and hear one note and you try to match ist pitch. If you have difficulties to match the pitch you can choose the option that the computer should wait until you match the note. As a guidance you always see where your pitch is and where your pitch should be.

Difficulty level 2:

What you see on the staff	What you hear	What you try to accomplish	Feedback you get	What you learn
				
Two notes to be sung	The two notes to be sung	Repeat the notes you just heard	The pitches you produced	Train your musical ear to remember sounds

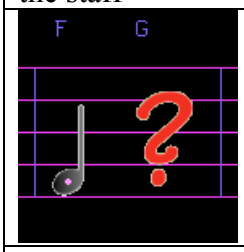
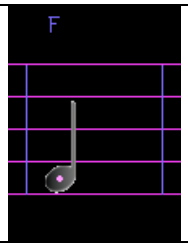
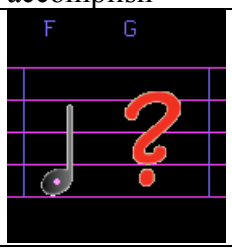
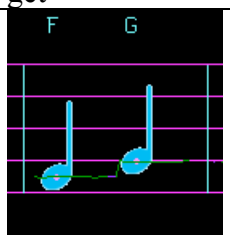
This level corresponds to the lesson 3: You see and hear two notes before you start singing. This forces you to memorise the starting note and also the second note, since you have to sing them at a later time.

Difficulty level 3:

What you see on the staff	What you hear	What you try to accomplish	Feedback you get	What you learn
				
Two notes to be sung	The first note of the two	Repeat the first note and build the second anticipated note with your inner ear	The pitches you produced	Produce a new note in relation to another

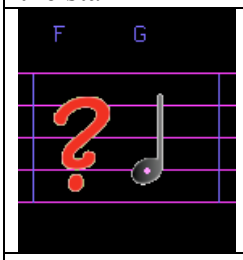
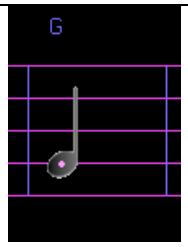
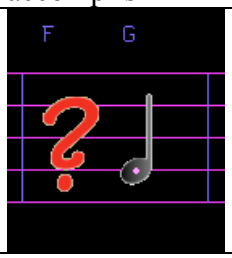
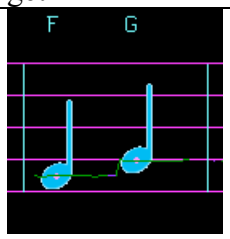
You may think that is easy: I cheat. I remember the note. What is so difficult? Nothing. But you have to remember the second note from a longer time ago! Because you did not hear it immediately before you sing. This level you can train with the lesson 3 by choosing the option “FirstNoteOnly” from the NoteAssistance Menu. In that lesson it is of course pretty easy because by going up a scale with two notes the last note of the previous part always corresponds to the first note of the next part. Using random notes makes it a little bit more difficult, since then you really have to remember the second note or to build it from the first note with your inner ear.

Difficulty level 4:

What you see on the staff	What you hear	What you try to accomplish	Feedback you get	What you learn
				
Only the first note of the two	The first note of the two	Repeat the first note and build the second anticipated note with your inner ear	The pitches you produced	Think in terms of intervals

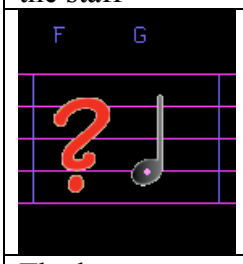
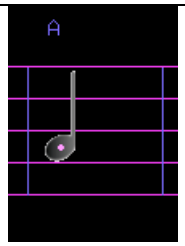
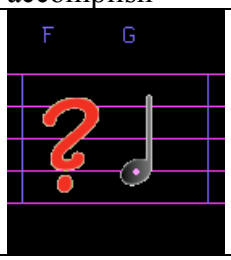
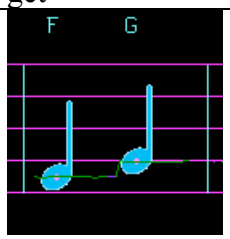
There is really no difference to the exercise in level 3. Except you will start to learn thinking in intervals because you do not see the second note displayed on the screen. Instead you see a question mark. Depending on the exercise, you have to sing a specified interval up or down. The advantage of thinking in intervals: There are only 12 intervals to remember. Intervals larger than an octave are called compound intervals.

Difficulty level 5:

What you see on the staff	What you hear	What you try to accomplish	Feedback you get	What you learn
				
The last notes to be sung	The last note of the two	Build an anticipated note with your inner ear given the ending note of the interval	The pitches you produced	Produce the starting note yourself given the interval

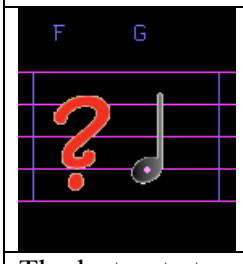
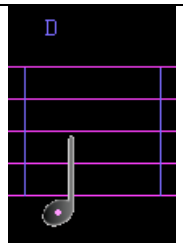
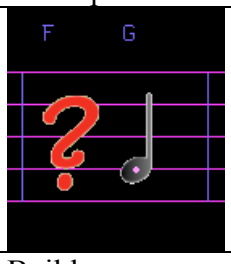
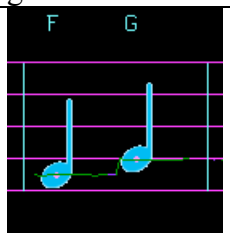
This exercise enforces the thinking in intervals, because you have to feel or hear the starting note relative to the ending note.

Difficulty level 6:

What you see on the staff	What you hear	What you try to accomplish	Feedback you get	What you learn
				
The last note to be sung and the fixed reference note	A fixed reference note: La	Build an anticipated note with your inner ear hearing and seeing a fixed reference note for the duration of a note.	The pitches you produced	Produce the starting note yourself given a fixed reference note

This time you get a fixed reference note. So you may think: what shall I bother about that note? I sing from the heart. But the reference note played on the beginning will disturb you, because it has another pitch which is further away. But soon you will be thankful for this reference note: It gives you a handle you can count on. Your inner ear will be starting calculating the needed sound relative to the reference pitch.

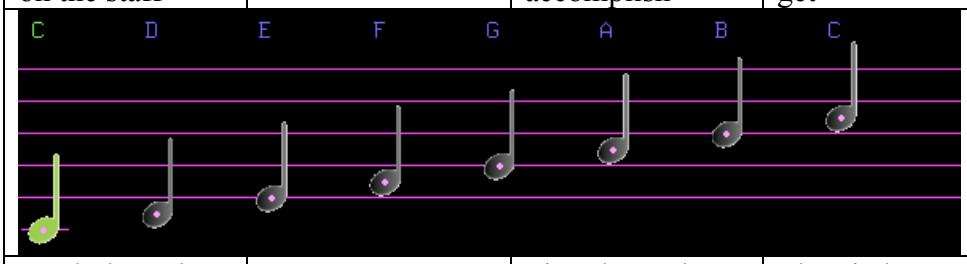
Difficulty level 7:

What you see on the staff	What you hear	What you try to accomplish	Feedback you get	What you learn
				
The last note to be sung and the random reference note	A random reference note	Build an anticipated note with your inner ear from an arbitrary note you hear and see	The pitches you produced	Produce the starting note yourself given an arbitrary reference note

		for the duration of a note.		

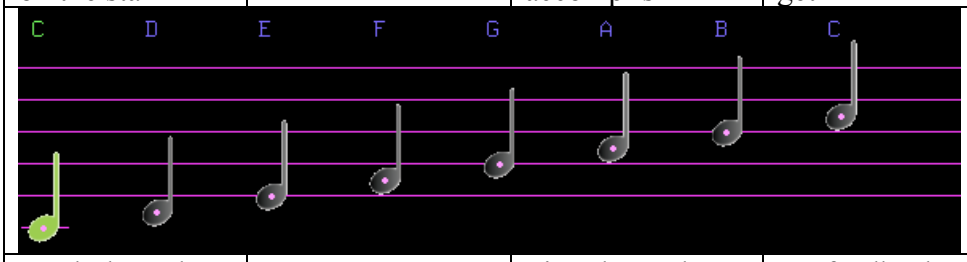
You have to calculate the starting note in your brain fast, to be ready when the recording starts. This brain training enhances your ability to adapt to real world environments. It is a healthy mental training, which will demand some concentration on your part.

Difficulty level 8:

What you see on the staff	What you hear	What you try to accomplish	Feedback you get	What you learn
				
A whole scale	No notes	Sing the scale from your inner ear	The pitches you produced	How good your inner ear lets you produce the notes

You are on your own. However, since you can now hit any note from any reference note, the only thing you have to figure out is: what is my inner reference note? Listening Singing Teacher helps you by giving you statistics. Now it is time to have a closer look at the stats to find your inner reference tones.

Difficulty level 9:

What you see on the staff	What you hear	What you try to accomplish	Feedback you get	What you learn
				
A whole scale	No notes	Sing the scale from your inner ear	No feedback during the performance, only the replay will show you the pitches	How good your inner ear lets you produce the notes

The whole scale without immediate pitch feedback shows you tendencies to drift from the target note. In the previous exercise you could still see where your pitch was, and therefore correct the note respectively the next note. In this exercise you probably recognize that some notes you hit very precisely and others you are always too low or too high. If you have one or more correct anchor points, you can start your way with relative pitch training to get the remaining notes correct. Of course you can also instruct your inner ear or voice to adjust the wrong pitches towards the correct note directly.

Ear-training summary

As you can see the difficulty levels do not change much from level to level. You probably even think the next level is the same as the one you just practiced. Indeed, it is so easy.

The ear-training exercises cover level 4 to level 7 in the above explanations. For each halfstep (1 to 12) there are the following exercises:

Level 4
You hear the starting note and must sing the interval.
- Interval no of semitones up
- Interval no of semitones down

Level 5
You hear the ending note and must sing the interval.
- Interval no of semitones up
- Interval no of semitones down

Level 6
You hear and see the reference note La (A) and must sing the interval.
- Interval no of semitones going up or down.

Level 7
You hear and see an arbitrary reference note and must sing the interval.
- Interval no of semitone going up or down.

Exercises for level 8 and 9 you can do with lesson 2 (or any other lesson): For level 8 just set “Note assitance” to “noNote”. For level 9 in the Display options deselect “Pitch progression” during the exercise, in replay mode set “Pitch progression” again to see the pitch curve you produced.

Iportant: Even so it is called ear-training, you have to sing! Take the last described level 9: On a piano it would be easy to spot the middle C and then play all the white keys to get a perfect performance. However, clicking some notes on an instrument does not train your ear the same way as producing them yourself. By going through the above process by singing, you will get the feeling for the music in your ears, much faster and deeper than by practicing an abstract instrument. That is because the instrument is not part of your body, but your voice is.

One warning: To accomplish all 72 ear-training exercises you should have a vocal range of 3 octaves! So, if a note is too low or too high for you, do not force your voice to sing that note! Just leave it out.

Do you have after these exercises absolute pitch? Unfortunately, no. But you are very close. Let us assume you are a soprano. After this method you will easily identify the notes in the soprano range, because you trained them and your inner ear. But if you hear a low bass note you wont probably be able to name the correct note, since the interval is probably two and a half octaves away from your reference ear. However you can train this too by making your own exercises. Make an exercise where the random reference note is defined to be in the bass range. So you still sing in the soprano range, you will learn the big intervals and be able to name the bass notes after a while.

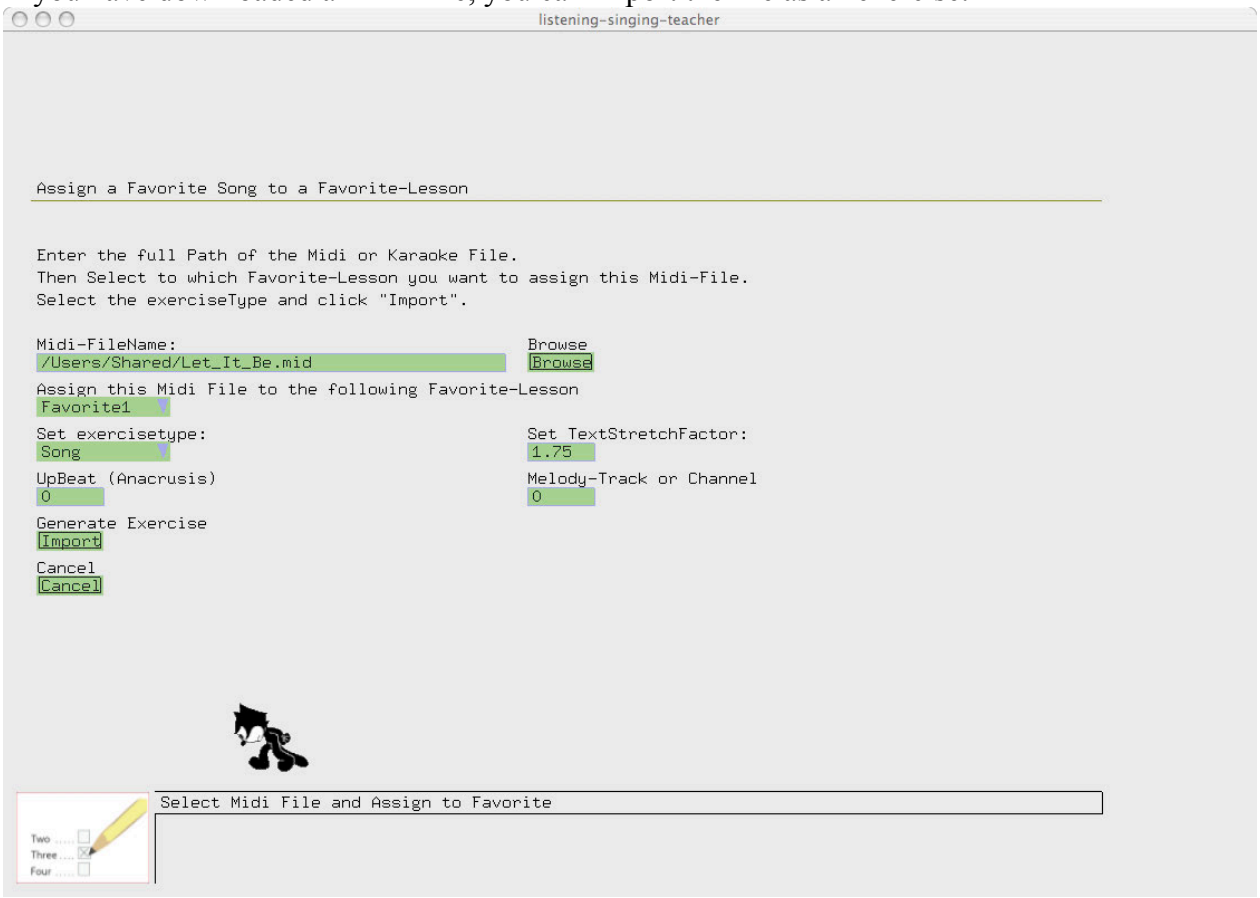
Sing your Favorite Song - Import MIDI Files

Of course, any kind of exercise can get quite boring, if you have to do it over and over again and do not seem to make progress. To break this situation and get new motivation, try to sing your favorite song. See how well you perform and have fun improving your pitch-hit score with one of your favorite songs.

To be able to do this you have to find a MIDI-File of your favorite song. Midi stands for "Musical Instrument Digital Interface" and is a protocol to enable electronic musical instruments to play notes according to the MIDI-commands contained in a file (imagine the file as a punched ribbon which gets used in music automatons, as you can see them in museums). The advantage of having the notes digitally in a file, which adheres to a defined protocol is, that you can do all kinds of manipulation to the content. For example you can change the speed with which the notes should be played, or shift all notes up or down. Or you can even change the instrument with which a certain channel should be played, that is you can say the melody should be played on a trumpet or on a flute or whatever you like.

On the Internet there are many MIDI files available, some are free others you can order. Some MIDI Files contain lyrics, these files often end with the extension .kar (for Karaoke) instead of .mid (for MIDI).

If you have downloaded a MIDI file, you can import the file as an exercise:



You can assign a MIDI file to any of seven available favorite lessons. Of course, you can overload them any time with another song.

For the ExerciseType you can choose Pitch, Rhythm, Song or Loudness. The difference between Pitch and Song is, that a Pitch exercise changes the Lyrics to Do, Re, Mi notation.

The TextStretchFactor lets you manipulate the distances between notes, so that the lyrics do not overlap from one note into the next.

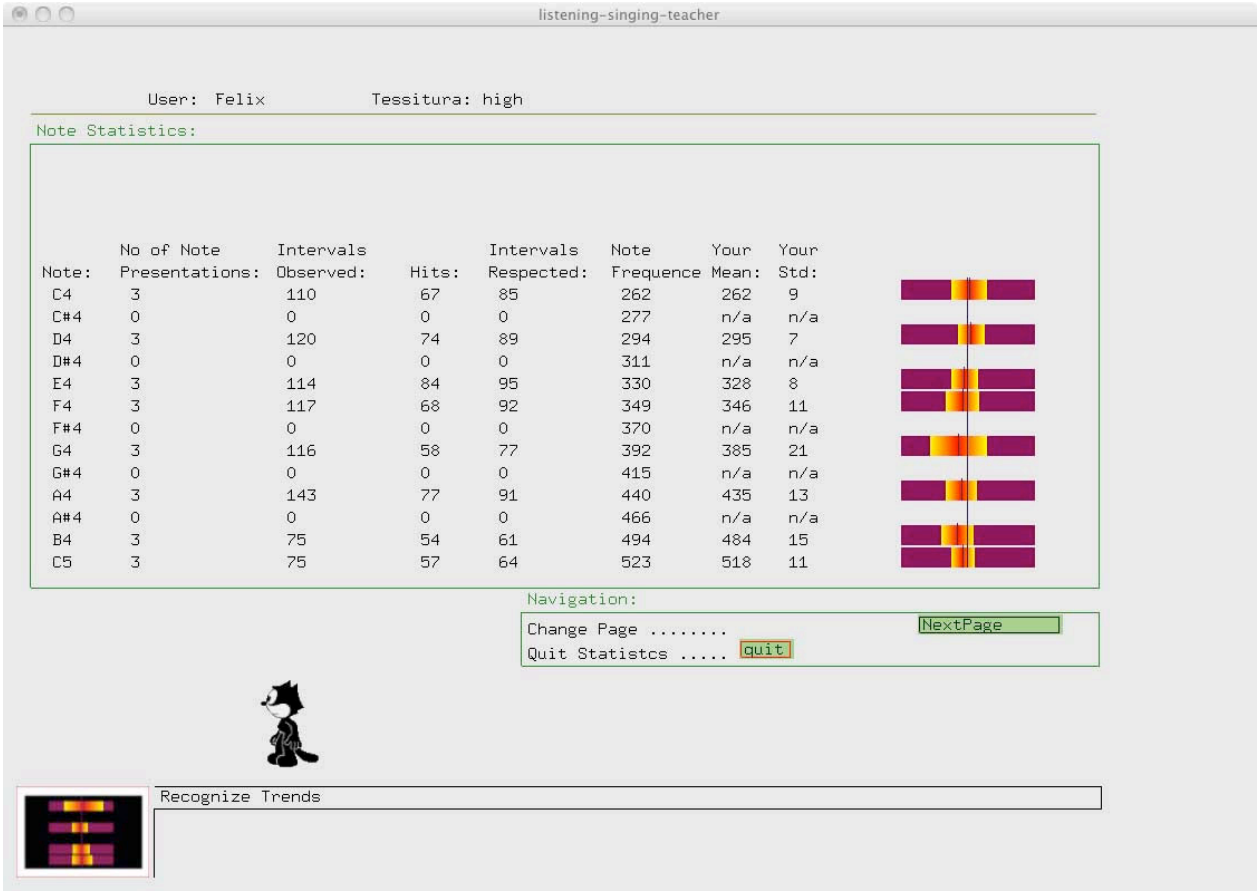
Some musical scores start with an upbeat (or Anacrusis). If the MIDI file does not make up for the correct upbeat, you can set an upbeat here.

Although the program tries to find a matching melody track to the lyrics track, it might not be the correct one, you specify the melody track here.

Once you have imported the MIDI file, you can load it as any other exercise. It is advisable that at the beginning of your training session you set the speed to very slow. In this way you can easier listen and repeat the single notes. Also, if your voice range is in a different range than the one supplied with the MIDI file, use the transpose option to adjust the range to your needs.

Statistics

Instead of making a lesson, you can choose to see the statistics by pressing the statistics button.



The statistics consists of several pages:

- Pitch statistics for the note range C4 – C5
- Pitch statistics for the note range C3 - C4
- Pitch statistics for the note range C2 – C3
- Pitch statistics for the note range C5 – C6
- On Beat statistics for note durations
- On Beat statistics for rests

The pitch statistics look like the above screenshot. There are nine columns:

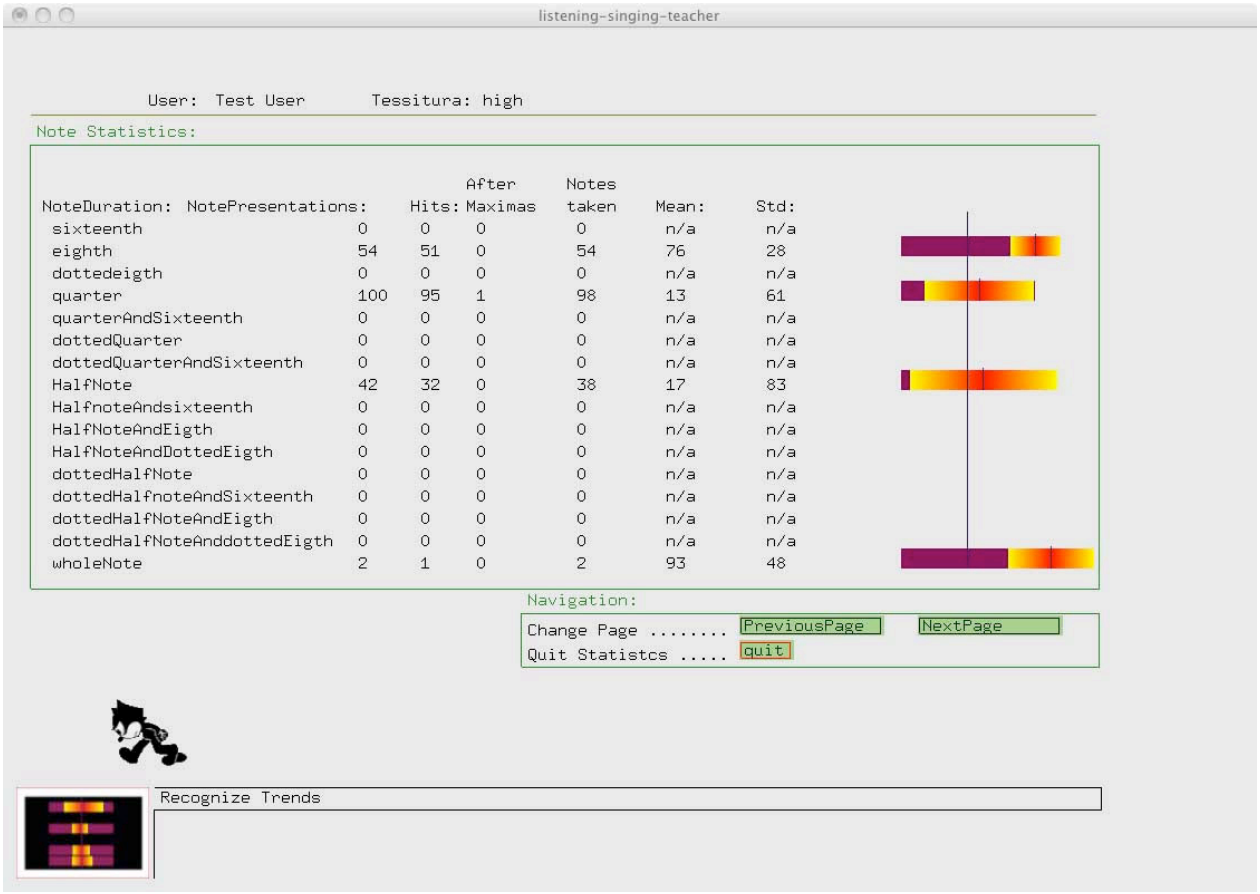
- Note
  Displays the note value for this line. Solfege syllables correspond as follows to the note names:
  - Syllable --> Notename
  - Do --> C
  - Di/Ra --> C#/Db
  - Re --> D
  - Ri/Me --> D#/Eb

- Mi --> E
- Fa --> F
- Fi/Se --> F#/Gb
- So --> G
- Si/Le --> G#/Ab
- La --> A
- Li/Te --> A#/Bb
- Ti --> B

Note that there is no E# or B#. An E# is the same note as an F and a B# would be the same note as the C of the next octave. The number after the note name gives the octave. On the piano A0 is the lowest key, with a frequency of 27.5 Hz. The middle C is C4 with a frequency of 261.63 Hz.

- Number of Note Presentations
  Tells you how many times the note was presented to you in a pitch exercise.
- Intervals Observed
  Longer notes have more observation points than short notes. The number in this column shows how many interval periods belonging to this pitch were observed.
- Hits
  This number tells how many of the observed intervals resulted in a pitch hit (the pitch frequency was within the predefined limits).
- Intervals Respected
  Since the pitch sensitivity can be varied, the number of notes who fulfill the criteria for a hit depends on the chosen sensitivity. For the statistics all intervals which fall into a the range of plus or minus two half steps will respected, independent of the chosen sensitivity. When a narrow sensitivity was chosen, this number is usually higher than the number of hits. Vice versa a very broad sensitivity may result in less respected notes.
- Note Frequency
  This displays the note frequency in Hz as it should be by definition.
- Your Mean
  This is the calculated mean frequency in Hz from the intervals taken into account from your performances.
- Your Standard deviation
  This is the calculated standard deviation. The smaller this number the less does your pitch over all observations deviate from the defined frequency.
- Graphical Display of the mean and standard deviation
  This column shows you graphically your mean pitch and variation around the pitch in relation to the real frequency.

The on Beat statistics window looks like this:

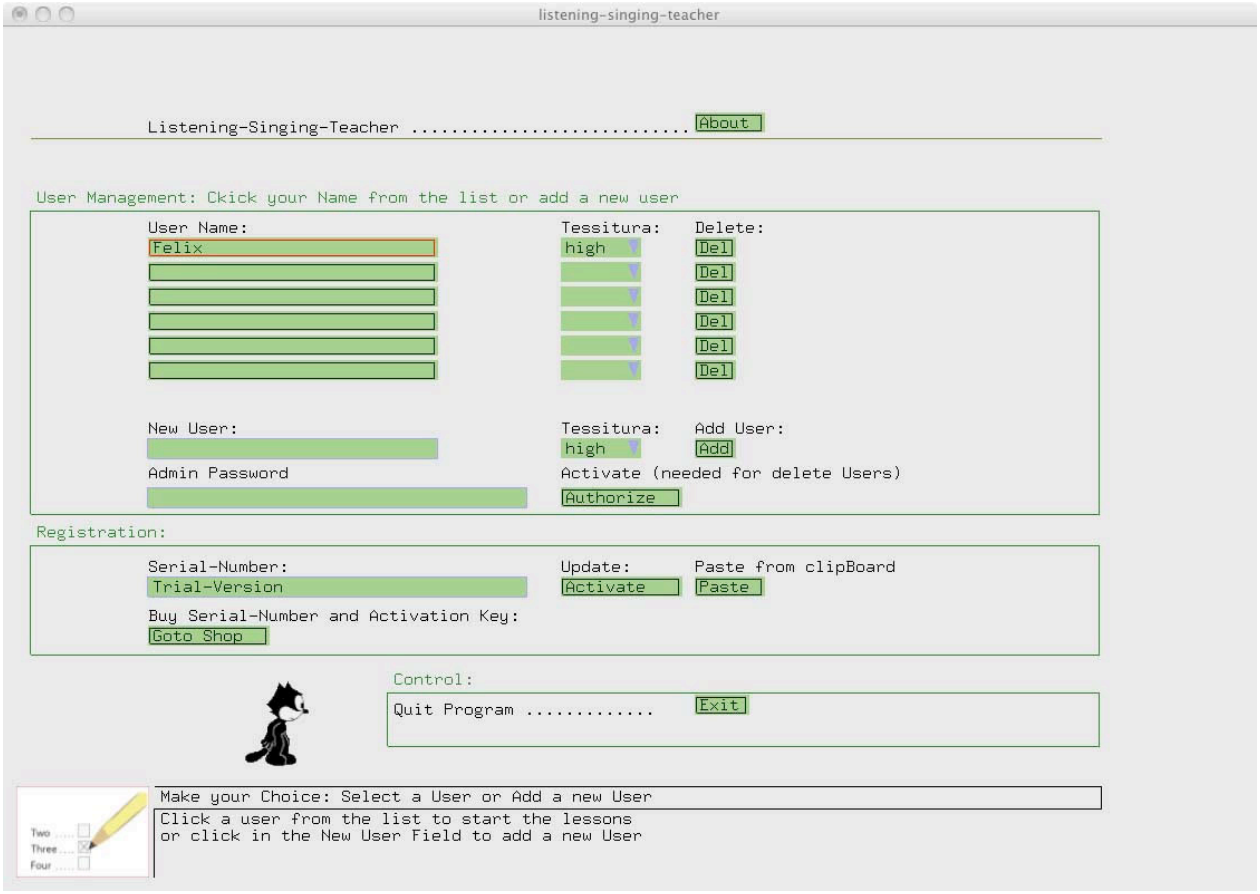


There are eight columns:

- Note or Rest Duration
  Note or rest length to which the line relates.
- Note Presentations
  Tells you how many times the specified length was presented to you in a rhythm exercise
- Hits
  Shows you how many times you continued after the note or rest, at the right moment.
- After Maximums
  Tells you how many times you had a maximum after the note kick and before the time of the note has elapsed.
- Notes taken
  Notes taken tells you how many of the presented notes were taken into the statistics. That is, notes which were clapped within a specified time range of the time due.
- Mean
  The mean should be 0.0. A positive number means you tend to clap too late, and a negative number means you clap too early.
- Standard deviation
  The standard deviation shows you the variation around the correct hitting point.
- Graphical Display of the mean and standard deviation
  To better visualize the situation a graphical bar with the mean and standard deviation is depicted.

Registration

The registration filed is in the “User Select” dialog in the frame Registration.



The fields in the registration frame have the following meanings:

- SerialNumber:
  Here you can enter a serial number manually. Normally you do not have to enter a number here, since during the ordering process the serial number will be entered automatically. In the case of a reinstallation you must enter the serial number again. We recommend that you paste the serial number from the order-confirmation mail with the button labeled “Paste”.
- Update:
  This button reads either “Activate” or “Deactivate”. When the product is not registered you have to go through an activation process, by entering the serial number and then press “Activate”. The activation process needs an active Internet connection. If the Button reads “Deactivate” the product is registered. Deactivation may allow you to transfer the program to another computer. However, there is no warranty implied that this process may function (see license terms).

- Paste from ClipBoard:

This button allows you to paste the serial number from the clipboard. You must first mark and copy the serial number in the mail, then come back here to paste the serial number. You still have to activate the serial number by pressing “Activate” (see before).

- Go to Shop:
  If you use the product more than 10 hours you must buy the product or delete it. To further use the product click on “Go to Shop” and follow the instructions.

Make your Own Exercise

The easiest way to make an own exercise is to make the exercise with a MIDI editor, and then import the MIDI file to one of your favorite lessons.

Another possibility is to make your own exercises with a text editor. This chapter describes the formats behind the files that are used with Listening-Singing-Teacher.

That is you can make pitch exercises, rhythm exercises, loudness exercises and song exercises. This allows you to practice a particular piece of music you like. However there are many limitations you have to be aware of. The limitations are pointed out in the paragraphs below.

To edit an exercise (except the first three lessons): right-click the application icon and choose “Show Package Contents”. In the new window navigate to “Contents” and “Resources” and then double click on the desired lesson folder. The last exercise folder is called “OwnExercise” and contains an empty accompaniment.midi file and an empty SampleSound file. To edit abc music notation files you can use the “TextEdit”, MS-Word or a third party program that displays abc notation (e. g. “Harmony Assistant”). To edit midi files use you can also use “Harmony Assistant”. To record sample sounds you can use “Audacity”, which allows you to export the recording in the ogg format.

When you make changes to individual files, be aware that the key and the tempo should be in harmony with the other files.

To run an exercise, the program needs five files:

- ABC-Notes.txt
- ABC-Chords.txt
- ExerciseParts.txt
- Accompaniment.mid
- SampleSound.wav

In addition an extra wave file may be present

- WaveAccompaniment.wav

The text files are plain ASCII files, do not save them as word documents, leave them unformatted when changing.

The easiest way to start experimenting is to copy the files in the OwnExercise folder, try to understand what they do, and then make changes to the files. A short description of the file contents follows:

ABC-Notes.txt

The first file contains the notes in ABC-notation. For detailed information about abc files search the web for “music notation abc”. Unfortunately, the program does not understand the full set and possibilities of the abc notation. The program is limited to only one voice, minimum note length is a sixteenth note, key signature and time signature are limited to the most often used, change of

tempo or key in the middle of a piece are not allowed, all repetition marks are ignored and depicted as a single bar, and other limitations may exist.

ABC-Chords.txt

The ABC-Chords.txt file may be an empty ABC-placeholder. If you want to use it, it has the same limitations as the ABC-Notes.txt file. In addition to get the Chords aligned to the notes the bars must be placed the same way as in the ABC-Notes.txt file.

The easiest way is to copy the ABC-Notes.txt file to the ABC-Chords.txt file. And leave it as it is. To make better sounding chord accompaniments you should then split up notes longer than a beat into several notes or pauses to place more chords than notes. The actual notes in the chords file are completely ignored; only the accents from the notes are taken for the chords. This allows you to make a livelier chord accompaniment.

ExerciseParts.txt

In this file the Exercise type, the text-stretch-factor, the individual parts, the random behavior and the reference note are defined.

The first line in this file must contain the word “Pitch”, “Rhythm”, “Song”, or “Loudness” and determines the kind of the exercise.

The difference between a Pitch and a Song Exercise is, that in a Pitch exercise it is assumed that the Text contains always solfege syllables. This means that the syllables get transposed too, if the exercise is a Pitch Exercise. If you want to make a movable “Do” exercise, you must choose “Song” as the Exercise Type. In this way the “Do” will always be displayed as the lyrics, independent of the note’s pitch. However, if you choose to listen to the song with a human voice, the voice will not sing the lyrics text, but the equivalent of the fixed “Do” solfege syllable.

Rhythm Exercises only evaluate rhythm. The rhythm sound has to be made as a short sound and should not have a long duration.

A Loudness Exercise, will only evaluate the loudness. That is notes with a “>” accentuation mark should be sung during their duration with a loudness higher than notes without an accentuation mark. Notes with a “<” must be quieter then normal notes (in the ABC notation the letter T before a note is used to announce Trill, here the letter T is misused for “<”).

The second line should contain a 1.0 in normal cases. This is the text-stretch factor, which allows you to stretch the distance between the notes, so that the text does not overlap. If you have one very long word it is probably better to shortcut the word, than to make all notes far apart from each other.

Below you see a sample ExerciseParts file.

```
Pitch
1.0
 0;  2; f; 27; 39; a; 36.
```

```
 3;  5; c; 27; 31; a; 36.
 6;  8; c; 27; 31; a; 36.
 9; 11; f; 29; 39; a; 36.
12; 14; c; 29; 32; a; 36.
15; 17; c; 29; 32; a; 36.
```

After the two first lines, each line has seven entries.

The first two entries define the starting and the ending note number. The numbering starts with 0. The ending number is included in the part, thus if only one note is in a part the starting and the ending note are the same. In this sample file three notes (0, 1, 2) are specified for the first part. The next line also specifies a part which contains three notes (3, 4, 5). The starting number must always be one higher than the ending number of the previous entry.

The next entry defines the randomness behavior. There are three possibilities:

"f": stands for fixed. No randomization is done.
"r": r randomizes the notes in the given range (see next entries).
"c": randomizes the notes but keeps the notes in the C-Key.

In this sample file the first part is fixed, the following to parts are randomized. Then a fixed part follows.

The next two entries only make sense when the randomness is either "r" or "c". These two numbers define the lower and the upper limit of the range in which the randomized notes should be. The range goes up in half steps from A1 (0) to c6 (52). In the sample file the second part randomizes the notes in the range of 27 to 31 and demands that the note are in the C-Key. This yields a random sequence of the three solfege syllable notes Do (27), Re (29) and Mi (30).

A remark about the randomization: The randomization process first shuffles the notes. This means the note durations get shuffled; this is handy for rhythm exercises. However, since beamed and slurred notes and bars cannot be shuffled easily, it is not possible to randomize parts, which contain such elements.

The last two entries are for the reference note. Again there are three possibilities:

"a": stands for fixed. The reference note is the next entry.
"b": the reference note is randomly drawn from the previously given range.
"c": The same a "b", but the reference note is in the C-Key.

If you ask for a fixed reference note, then the next (and last) entry specifies the pitch of the reference note. In the sample file the reference note is defined to be the note a (440 Hz).

Table for Note Mapping in the ExerciseParts file

Note Name	Octave	ABC Notation	Solfege Syllable	Note Mapping	Midi Number	Note Frequence
e	6	e'	Mi	55	88	1318.51023
dis or es	6	^d' or _e'	Ri or Me	54	87	1244.50793
d	6	d'	Re	53	86	1174.65907
cis or des	6	^c' or _d'	Di or Ra	52	85	1108.73052
c	6	c'	Do	51	84	1046.50226

b	5	b	Ti	50	83	987.76660
ais or bes	5	^a or _b	Li or Te	49	82	932.32752
a	5	a	La	48	81	880.00000
gis or as	5	^g or _a	Si or Le	47	80	830.60940
g	5	g	So	46	79	783.99087
fis or ges	5	^f or _g	Fi or Se	45	78	739.98885
f	5	f	Fa	44	77	698.45646
e	5	e	Mi	43	76	659.25511
dis or es	5	^d or _e	Ri or Me	42	75	622.25397
d	5	d	Re	41	74	587.32954
cis or des	5	^c or _d	Di or Ra	40	73	554.36526
c	5	c	Do	39	72	523.25113
b	4	B	Ti	38	71	493.88330
ais or bes	4	^Â or _B	Li or Te	37	70	466.16376
a	4	A	La	36	69	440.00000
gis or as	4	^G or _A	Si or Le	35	68	415.30470
g	4	G	So	34	67	391.99544
fis or ges	4	^F or _G	Fi or Se	33	66	369.99442
f	4	F	Fa	32	65	349.22823
e	4	E	Mi	31	64	329.62756
dis or es	4	^D or _E	Ri or Me	30	63	311.12698
d	4	D	Re	29	62	293.66477
cis or des	4	^C or _D	Di or Ra	28	61	277.18263
c	4	C	Do	27	60	261.62557
b	3	B,	Ti	26	59	246.94165
ais or bes	3	^Â, or _B,	Li or Te	25	58	233.08188
a	3	A,	La	24	57	220.00000
gis or as	3	^G, or _A,	Si or Le	23	56	207.65235
g	3	G,	So	22	55	195.99772
fis or ges	3	^F, or _G,	Fi or Se	21	54	184.99721
f	3	F,	Fa	20	53	174.61412
e	3	E,	Mi	19	52	164.81378
dis or es	3	^D, or _E,	Ri or Me	18	51	155.56349
d	3	D,	Re	17	50	146.83238
cis or des	3	^C, or _D,	Di or Ra	16	49	138.59132
c	3	C,,	Do	15	48	130.81278
b	2	B,,	Ti	14	47	123.47083
ais or bes	2	^Â, or _B,,	Li or Te	13	46	116.54094
a	2	A,,	La	12	45	110.00000
gis or as	2	^G,, or _A,,	Si or Le	11	44	103.82617
g	2	G,,	So	10	43	97.99886
fis or ges	2	^F,, or _G,,	Fi or Se	9	42	92.49861
f	2	F,,	Fa	8	41	87.30706
e	2	E,,	Mi	7	40	82.40689
dis or es	2	^D,, or _E,,	Ri or Me	6	39	77.78175
d	2	D,,	Re	5	38	73.41619
cis or des	2	^C,, or _D,,	Di or Ra	4	37	69.29566
c	2	C,,	Do	3	36	65.40639
b	1	B,,,	Ti	2	35	61.73541
ais or bes	1	^Â,,, or _B,,,	Li or Te	1	34	58.27047
a	1	A,,,	La	0	33	55.00000

The frequency for an equal temperament note gets calculated as:

$$f = 2^{n/12} \times 440 \text{ Hz}$$

Where n is the distance in half steps from the reference note “A” (440 Hz). Notes above “A” have a positive n, notes below “A” get a negative n in this formula.

There are 12 half steps in an octave. The growth factor of a half step is approximately 1.059 as we have seen in our theoretical part of the lesson “Up and down in Halfsteps”. The exact number for the growth factor is:

$\sqrt[12]{2}$

(twelfths root of 2).

Accompaniment.mid

This midi file is necessary to be able to listen to an accompaniment. Important: the midi file must have the same tempo and key as the ABC-Notes.txt file. Otherwise it will not be in sync with the notes.

For your convenience an empty midi file “EmptyMidiFile.mid is included. If you do not supply a suitable midi file yourself, you must copy and rename this file to accompaniment.mid.

SampleSound.wav

This file must be present if you choose to play the sound sample by pressing listen to Exercise in the options dialog.

An empty file EmptySoundWav.wav is included here. If no sample recording will be made, then this file should be copied and renamed to SampleSound.wav.

WaveAccompaniment.wav

This file allows you to give use any .wav file as an accompaniment file. If this file is present, then this file will be used instead of the midi file. However, if you do tempo changes or transpose the melody, this will not be reflected with this file. In addition the start of the hearable sound must start right at the beginning. Songs, which have tempo changes, will not work correctly, since a steady beat is assumed.

Tips on How to Learn to Sing with Listening Singing Teacher

Posture

In general staying when speaking or singing is the preferred posture of the body. Staying allows the belly and the breast to move freely. An upright position with the head not leaning forward or backward allows an easy flow of the air.

Breathing and articulating

Correct breathing has several advantages:

- You breath deeper, so you can hold a note longer
- You automatically take a better posture be able to fill your lungs.
- Your straight posture and controlled slow breathing give you a relaxed mind.
- Feeling relaxed, takes the fear of making mistakes.

On the web you will find a lot of exercises on how to breath correctly. The main thing is to use the whole lungs so that more air is available, which you then can exhale controlled as necessary. To fill your lungs you must use abdominal breathing, this means that your stomach should expand during inhalation and slowly move inward as you sing (or exhale).

To be well understood you should articulate words and phrases correctly. Often the ends of words get “swallowed”. Singing is more complex than only speaking. Therefore try to speak correctly, record your speaking voice and analyze the clarity of your speaking, before singing the words. Make sure that you know the lyrics comfortably. Then make sure that you know the tone. This should give you confidence to sing clear and understandable.

-

Listen and compare

Use the possibility to replay your singing performance. Watch the pitch curve’s color and listen carefully to what you sung at that time. Listen again and let the computer play the correct reference notes along your singing. Try to hear the difference between your voice and the sound produced by the computer. To have a neutral comparison possibility use the sinus voice for replay. You can also sing along the replay, and try to make the performance better. It is always a good practice to try to correct errors, no matter what the discipline is. Of course, during the replay there is no recording and the pitch hints still show the pitch curve of the recording.

Difficulties with single notes

Try to sing another vowel or consonant. Instead of singing “laaaaaa”, it may be easier to start with a long “lllllll” and then softly turn to the “a”. Try a long “ssssss” in “soooo”, or a long “mmmm” instead of “miiiii”, but you can take any other vowel or consonant. Look at the scope for a wavy line. You just have to feel comfortable, and from there you can start building up a broader voice range with all the vowels and consonants.
Sometimes you can sing high notes and low notes, but the notes in between do not come easy. This may be, because we all have a head voice and a chest voice. The head voice is better for the high notes and the low notes usually come from the belly. Do not worry; just sing the notes you

can. If you feel comfortable with the notes above and below use the push exercises. But do not stress your voice – to master the notes in the between-zone. Try to reach the "missing" notes with the pushing up exercise and try to reach the notes going down with the pushing down exercise. Go slowly and be patient.

Microphone settings

For Pitch exercises set the input level as high as needed, so you can sing comfortably without stressing your voice. For On Beat exercises set the input level lower, so you do not get unwanted after beats because of environmental noise.

Environment

If possible take the computer to a room, which is quiet. Use a low noise computer.
Have as little as necessary electrical fields in the room, e.g. turn your handy and other equipments off. Long cables along the microphone cable can induce hearable disturbance by induction (if during the replay - when it should be silent -, there are hearable quirks and hissing, then check the cabling, the microphone and the connections).
Finally, the room should have good, fresh and tempered air.

Recognize trends in your voice

Use the statistics to see if you have tendencies to sing some notes too high or too low.

Variety and confidence

Make the exercises in different pitches and tempos. This gives you the needed confidence to be able to perform correctly in different environments.

Absolute Ear (or perfect pitch)

Singing is one of the key factors to get an absolute ear. It makes sense that many people speak of the perfect pitch. By singing you have to imagine with your mental ear, how you will use your vocal body parts to produce the desired pitch. You have no other reference than your body and mind. By focusing on the parts, which are responsible for the pitch, your memory must recall earlier similar situations. Everybody is different, so an earlier situation may be going from a relaxed neck to a certain level of tension. By mentally going through that experience you may feel a slight sound, which you then amplify in your head until you feel ready to produce the sound. With Listening Singing Teacher you have an external reference. So when you are sure that what you produced was what you wanted, and Listening Singing Teacher shows you a different pitch, then it gets easy: you must have recalled the wrong pitch. Otherwise, if you feel that what you produced was not what you wanted, you have identified a mistake in your producing act. Do not try a lot of different sounds at a time, start with one or two pitches, with which you feel comfortable. If you can hit a pitch within a certain limit, e. g. you are always within plus minus a half note away, your are on the way to your goal. From one or two pitches it is for most people pretty easy to construct other notes (in the beginning not perfect, but making progress over time). The ability to know how to produce a pitch enhances your skill to recognize a pitch. By

producing the pitch with your inner mental ear, you can compare the pitch with the real sound that you hear.

Be patient. Practicing a lot will give you the perfect ear. Use the possibility to hear a reference note before you start singing. This promotes the inner hearing of intervals. At the same time you may find, that you can recognize or hit some notes better than others. Experiment with different vowels and consonants. Build on those inner feelings. Listening Singing Teacher supports the finding of pitches which are embedded in your body. By collecting statistical pitch data for each note, you immediately see which notes have a lesser diversity than others. You also see trends in the deviation from the aspired pitch. In this way – in the beginning - you can focus on tones, which can easier be produced consistently and therefore tighten the relationship of your mental ear with your body. Finally you are able to produce a perfect pitch - out from nowhere – which you then can use as your reference pitch. Try the exercises with a random reference note, and finally try without a reference note and see on the screen on which pitch your note started. If you do not give up, there is a big chance that you find your inner pitch meter for some notes. The other notes can then be drawn from those immersed inner notes by practicing intervals.

Singing is a key factor to the absolute ear. By singing you have to produce a sound with the parts of your body. Therefore you can feel the sound much better than by merely pressing a key on a piano. Nothing is nearer to your perception than your own body parts. Of course your body is dependent on many factors (mood, awakens, etc.), so it is good idea to check with an external reference from time to time. A positive feedback will also increase the trust in your own predictions.

Taking a real teacher

If you like singing and good advice is worth something to you, look for a real teacher. You do not have to take a whole year course, just negotiate to take a few hours and see how you can benefit from the feedback. Listening Singing Teacher will not give you feedback on your posture, breathing, articulation, dramaturgical performance and other things. Listening Singing Teacher may even fail to recognize your pitch, or may be too slow for fast music pieces.

Practice times

We recommend that you always start with a “warm up” exercise like “Scale one note at a time”. As with learning another language, it is recommended that you make more short sessions than one long session. We also suggest taking a break every 15 minutes or so, thus your voice and ear can relax and your brain can work up the feedbacks.
It is also enriching your experience if you try a lesson in the morning, then around mid-day and finally in the evening. You may find that your voice and your perceived recognition are different at different day times.

Singing and other activities

Singing can be done with a lot of other activities (e. g. showering, hiking, cooking, etc.). However, keep in mind that singing needs a lot of concentration: You must prepare the next sound you want to sing in your head. Then you must mechanically produce the real sound. When

producing the sound you must listen and compare the produced pitch with the desired pitch. If they deviate, you must adjust your singing. You also have to keep in pace with the rhythm. Therefore for learning it is best not to do other activities in parallel. You may prefer to drive with your car to a silent, undisturbed place for practicing with a laptop, but do not sing during the drive, because driving needs all your attention and has priority.

Making dictation exercises

Every exercise can be made a dictation exercise, by choosing the option “Blind-Exercise” and from the NoteAssistance Menu choose “WholePart”. This will play the notes, but you do not see them on the staff. You then have to repeat them from your memory. In the replay mode deactivate “Blind-Exercise” to see the notes. This is especially challenging, if you download an arbitrary MIDI File and then try to figure out the notes.

FAQ

What do I get for the payment?

Payment permits continued use of this version of the installed software on the computer the software was installed and access to all lessons. There is no warranty on the software. The tracking down of errors on other machines than ours is far too complicated. If you discover a software fault, please notify us.

In short, by paying you are allowed to use the program as it is, as long as the program works (e. g. operating system changes may make the program unusable).

What happens if I do not register after 10 hours?

Nothing. You break the rules. Please be fair, a singing lesson of an hour with a real teacher, costs approximately the same as the license for this program. Of course a real teacher can get you additional important feedback on your posture, the breathing and other things, so you cannot compare the two approaches with each other. Many people will try this program for free, and they are allowed to do so: for ten hours. If you still use the program after ten hours, it seems that the software is useful to you: therefore paying is only fair.

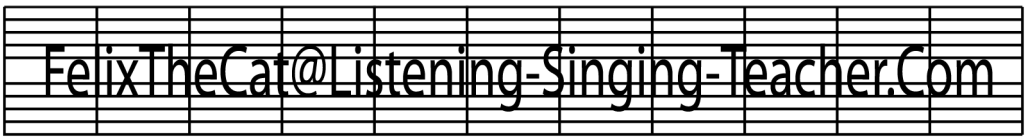
Where do I get support

There is no telephone support hotline. However we are interested in improving the product.
If you find errors or experience program crashes, let us know. Tell us also about documentation errors, sound errors or any other improvement possibilities of the program.
If the program stops unexpectedly, see in the system console log for error messages.
If the problem can be documented by the recording, export the recording and send the recording along with an error description.

Check if you can download a newer version with the same major version number. If so, back up your old version, before installing the newer version and try to reproduce the error.

If you get no or a wrong pitch responses from the program, please check in the replay mode what was recorded. If nothing gets recorded, check the sound control panel if the default input device is working correctly. If the input level is too low, increase it with the slider. If this does not work, you may have a microphone, which is not suited for that input channel. Expensive microphones often need special pre-amplifiers! The input channel must support microphones, line-in input channels expect a higher voltage signal than what you will get from microphones. There may also be a separate control panel for your digitizing device to adjust the sensitivity, check your hardware manuals. If you hear a lot of background noise, make sure nothing else is disturbing you. If there are clicks, chirps or hissing hearable, you might have unshielded microphone cables, which pick up electro-smog, or the microphone itself picks up a grumble from the 50/60 Hz power outlets. Try to reposition the microphone/cables. Make sure that the loudness display is in a correct range. If you make no sound, the sound control panel should show zero input level

indicator lights or a maximum of two. If everything seems to be in a good range then make a hardcopy of the particular situation and export the recording, before mailing.

Send all the information (e. g. Computer Model, RAM, graphic card, audio equipment, etc.) you think might be helpful in resolving the problem to:

Can I print the statistics or songs?

Unfortunately, this version does not contain a print feature; you must make hardcopies of the windows (use the application grab from the utilities folder). The songs and exercises may be printed from other applications, which can read abc-music notation. The songs can be found in the lessons directories (right-click the application icon and choose “Show Package Contents”. In the new window navigate to “Contents” and “Resources” and then double click on the desired lesson folder).

Why this fancy licensing terms, like the use of software is all at your sole risk?

In today’s modern world, where everybody can sue everybody for everything, one has to be cautious. Assume you are a super soprano, and you can break glassware just by singing. Please do not blame Listening Singing Teacher for such achievements; we are not willing to pay for that. Even worse, if you are a bass singer, which could destroy Jericho (hopefully you do not live in New York) … You get the idea!

Software is very complex, and computers are configured in different ways (and maybe have some problems on there own, it may even be important in which order you installed software), we cannot predict the behavior of the program. Therefore the risks to download, install or run the software is all at your risk. If you are very insecure and think if you stay at home all the time then you are safe, okay. If you fear that this software can destroy your computer or data on your computer: do not download, install or run this software. We really cannot guarantee that the server from where you download the software has not been hacked or that during the transmission no manipulations were made.

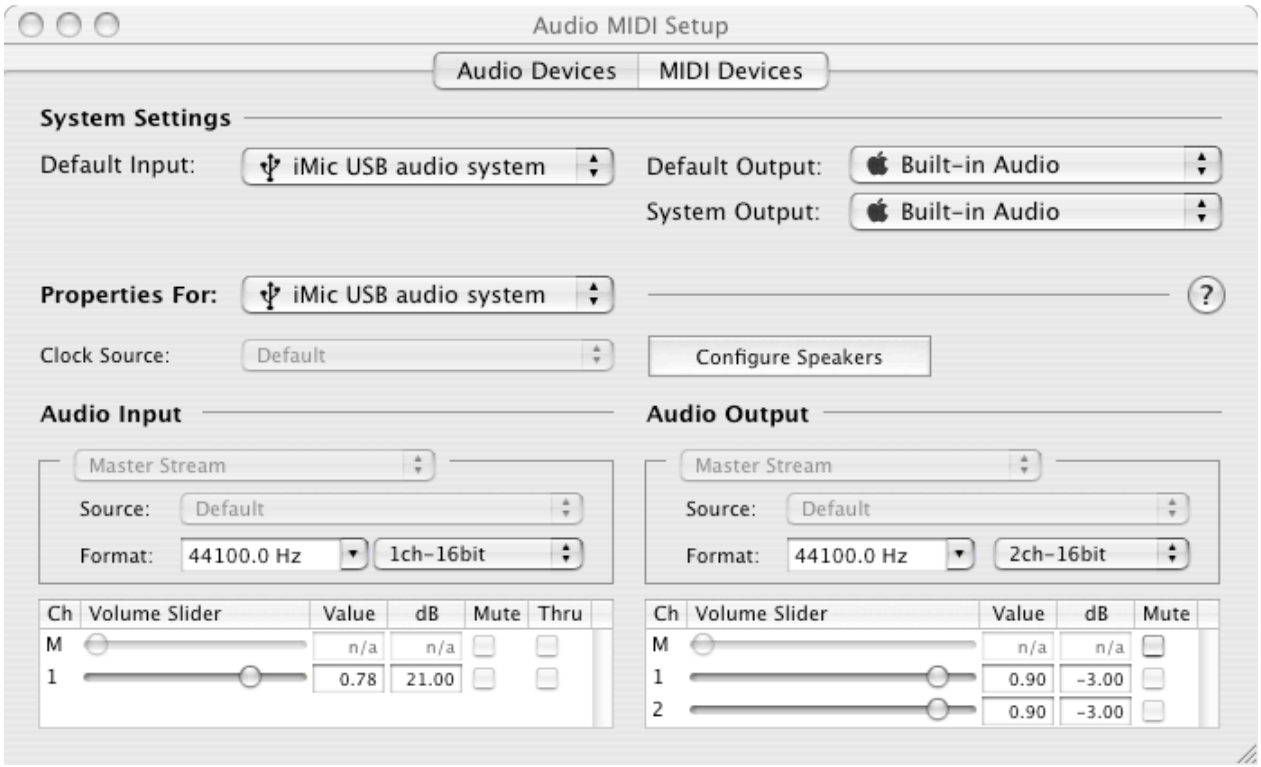
Do I have to be online to use the software?

No. You only have to be online for the download and the activation of the serial number.

Microphone Input level too low, distortion or audio device not supported (Macintosh)

In the applications Utility Folder open “Audio Midi Setup”, and Select the “Audio Devices” Tab. From the “Default Input” Drop down Menu choose your microphone and in the “Properties For” also choose your microphone (see below). Drag the slider on the bottom of “Audio Input” to the right. Also make sure that the selected format is 44100.0 HZ and one channel 16 bit (1ch-16bit).

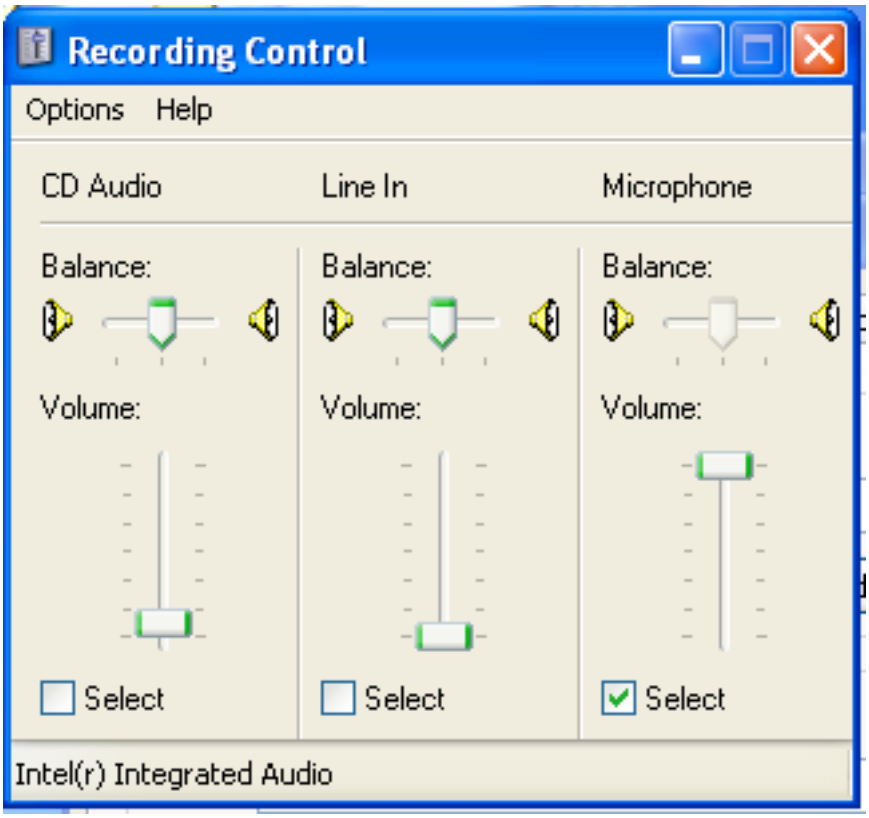
Other audio applications (e. g. GarageBand) may reset the input level, the frequency or the 16bit setting to 8bit. Be sure to check and set the following settings correctly:



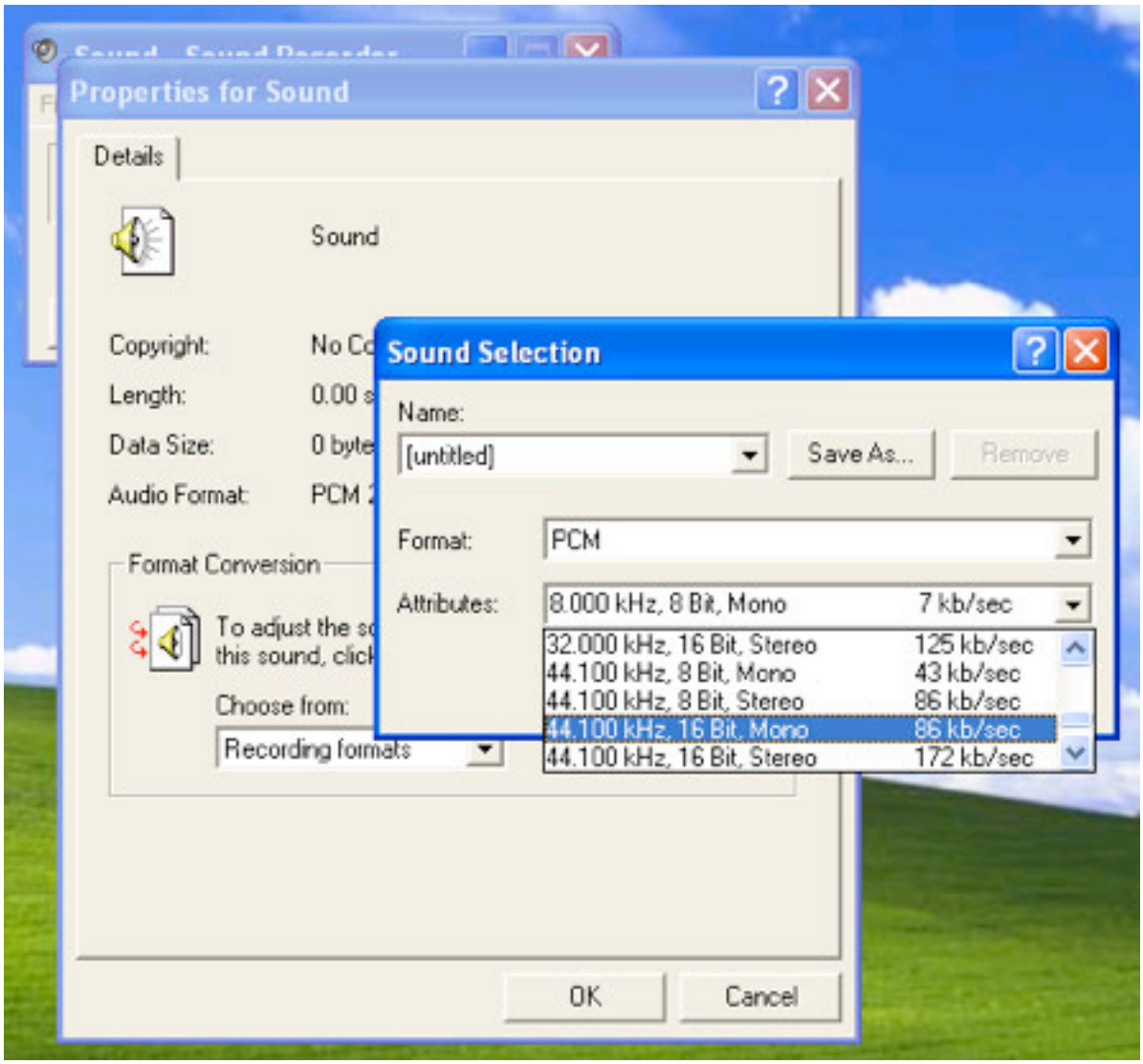
Microphone Input level too low, distortion or audio device not supported (Windows)

Be sure to have stepped through the “Problem Solving Windows” paragraph in the “Introductory Lesson” chapter.

Set the volume for the microphone to the maximum.



Also make sure that the Format is set to 44.100 kHz and 16 Bit Mono. Make a Test Recording with the “Sound Recorder” (Click On “Start” --> “All Programs” --> “Accessories” --> “Entertainment” --> “Sound Recorder”).


Properties for Sound
Details
Sound
Copyright:
Length:
Data Size:
Audio Format:
Format Conversion
Choose from:
Recording formats
OK
Cancel
Sound Selection
Name:
[untitled]
Save As...
Remove
Format:
PCM
Attributes:
8.000 kHz, 8 Bit, Mono 7 kb/sec
32.000 kHz, 16 Bit, Stereo 125 kb/sec
44.100 kHz, 8 Bit, Mono 43 kb/sec
44.100 kHz, 8 Bit, Stereo 86 kb/sec
44.100 kHz, 16 Bit, Mono 86 kb/sec
44.100 kHz, 16 Bit, Stereo 172 kb/sec

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