EarTrainer

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Contents

Chapter 1

EarTrainer

1.1 EarTrainer V2.0 documentation

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                                    EarTrainer V2.0
   The utimate tool for musicians who want to train their relative hearing.

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          Discription
           Introduction To Those Unfamiliar With EarTrainer


          Requirements
           What You Should Own To Run EarTrainer


          Usage
           How To Use EarTrainer


          More
           More Info On EarTrainer.
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1.2 Copyright & Disclaimer

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Legal
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Eartrainer  V2  can  be freely used and distributed as long as:
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– The program's code and this document are not changed in any matter.

– The program is accompanied by this document file.

– There is no fee charged for the program, other than costs for Copying,
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Disclaimer

This product is sold "as is" without representation or warranty of any kind,
either expressed or implied. The user assumes all risks and responsibilities
related to its use.

NOTE: midi.library is copyright of Pregnant Badger Music, many thanks !

1.3 Discription

Why Eartrainer ?

Some time ago I had to pass entrance examination in order to get accepted to
the University Of Arts here in Holland. This test included a part in which
the student had to name the Intervals played (harmonically), the Chords
played (and their Inversions) and had to write down a few melodies and
rhythms.

In order to prepare myself for this exam I had to train my hearing abilities
practically from scratch. So to save me some time (and that of my friends),
I came up with the great idea to write me a program with which I could train
it all by myself, and in no time. Well, not all, rhythms and full melodies
are not YET included.

Features:

o Eartraining for all musicians from beginner to expert.

o Easy to use GUI with saveable settings.

o Currently implemented training in:
      – Melodic and harmonic intervals
      – Chords and Arpeggios (diminished, augmented, sus4, and 7th chords)
      – Scales (all the seven modes, harmonic and melodic minor, octatonic
        and whole tone scales).

o Many difficulty altering parameters.

o Changable midi parameters such as channel and programnumber.

NOTE : Amiga samples and internal sounds are not supported, see 'More'.

1.4 Requirements

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What you absolutely need.
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- Your Amiga has to be at least WB2.0.

- Have the midi.library installed in your LIBS: drawer. Version 2.0 of the
  midi.library is included with this package. This is about the only instal-
  lation you have to do, provided you haven't got it already there.

- An S: assign to a physical place.

- A set a fully functional ears.

1.5 Usage

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            Using EarTrainer V2.
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To start the program just click on the icon or run it from the CLI.

The minute you started the program, eartrainer will play you a interval,
chord or scale (depending on the saved settings or of the way you left
Eartrainer earlier).

Our quest begins, just click one of the lower gadgets on which you think the
right answer is printed. If your guess was right, Eartrainer moves to the
next quiz. In case of an incorrect answer, the gadget with the right answer
will flicker for a few seconds.

If you wanna hear the question again just push the 'Hear' gadget.

When temporarily get a blackout and haven't got a clue: push the 'Solve'
button. EarTrainer will then point out the correct answer (affecting the
score anyway).

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Changing The Kind Of Training.
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Clicking on the top gadget, the one which is labelled 'Mode', you can browse
through the three different trainingmodes. These are Intervals, Chords and
Scales. When you hit the gadget and the program still waits for you to
answer the previous question, if will continue after you answered.

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The Options Sliders.
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With these you can change the midichannel ET2 sends over, the patch of your
midi-device(s) and with which velocity (volume) the notes are struck. The
'Speed' slider sets the tempo with which the melodic intervals, arpeggios
and scales are played.

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Interval Options.
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Mode: You can toggle this between Melodic and Harmonic. As it says, in
         melodic mode the interval is played as two seperate notes after each
         other, on the other hand, when in harmonic mode, the notes are
         played together at once.
         It's even possible to toggle between them during a question, just
         press 'Hear' again.

Scale: With this you can select if the interval is deducted from a Major,
         Minor scale, or all notes are used ('Chr' = Chromatic). The
         appropriate gadgets will be disabled. Great for beginners !

Range: The gadget which is marked with '12' and '24' selects the distance
         between the first (or lower) note and the second (or higher note).
         With the '12' selected, the interval will be played within an octave
         (within the 12 notes). When the '24' is selected all intervals will
         be transposed an octave, causing a larger frequency distance between
         the two notes. This is for the more advanced among us.

Direct: This causes the direction a melodic interval is played. 'Up' and
         'Down' cause the interval to be played only above resp. below the
         root. When 'Both' is selected, EarTrainer chooses, everytime, a
         direction randomly.
         When training harmonic intervals this function is disabled (a
         harmonic interval as played here can not be called absolutely above
         or below).

The Chord Options.

Mode: This determines if the chord is played at once 'Chord' or as an
         arpeggio 'Arpeg' (arpeggio = broken chord). The same here as with
         the intervalmode, it can be toggled during a question to make things
         a bit easier for us.

Inv: With this checkbox you can en- or disable the chord or arpeggio to
         be played within inversions (meaning that every note in the chord
         can function as the lowest one). When checked EarTrainer chooses
         randomly an inversion. The kind of inversion isn't asked, but it
         increases the difficulty of recognizing enormously. Therefore, I
         should recommend it to advanced only.

Bass: Determines wheter a bassnote is played along with the chord or
         arpeggio. This function can be toggled during a quiz. The option is
         a kind of compensation for previous one. Now the bassnote is the
         lowest note !

Chords: These five boxes tell ET2 which chord to train you in. The first
         'M,m' is always disabled and checked, creating a basic repertoire to
         test you in.

         M,m mean the Major and minor chords here.

         Dim means diminished. In conjuction with the 7th's it can become ø7
         or o7.

         Aug means augmented. In conjunction with the 7 it becomes +7.

        7,x7 stand for the seventh chords 7, x7, Maj7 and minMaj7.

        Sus means suspended. In conjunction with the 7th's it can become
        sus4Maj7 or sus4min7.

        To avoid confusion over this I've included a
                Table
                  in which all
        used chords are spelled out.

The Scale Options.

Scales: These six gadgets determine which scales are chosen from randomly.
        The first four, marked with the Roman numbers, are the seven modes
        deduced from the major scale. In normal English this means: I is the
        major scale itself, II is the major scale but started on the second
        scale note (in case of a C major a D), III beginning on the third
        note of the major scale, and so on.

        Like within the Chord options the first one is disabled. This stands
        on for the basic scales I = ionic and VI = aeolic (major and minor).

        The following three stand for the other 5 scale modes.
        II = doric, III = frygic, IV = lydic, V = mixolidic, VII = lokric.

Direct: Again you can specify the direction in which the quiz is played,
        'Up', 'Down' or 'Both'.

The Score Window.

The window next to the midi parameters is used to display the current scores
you've got. Each bar graphically displays the score on that particulary
interval. The score window can be seen as a sort of audioanalyzer for your
ear-recognizion abilities. Each geuss in the Interval, Chords or Scales mode
affects the score window. Even pressing Solve will cause the right answer to
be subtracked from the appropriate bars (a sorry to cheaters). When a bar is
above the black line you score is ok, when below it is not ok. After a
period of training you can just read out the results here and know which
areas of you hearing need more practice.

Configuration File.

When Eartrainer is started for the first time, all the options are set to
default. When you select 'Save Settings' from the menu, all the current
options are saved to the configurationfile in the S: directory, called
'ET2.conf'.
If you leave the program and haven't saved during its run, ET2 will
automatically save the options for you. Selecting 'Last Saved' brings all
the options back to the moment the configurationfile was last saved.

1.6   More info on Eartrainer V2

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So you want to know more ?
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ET2 was designed on a Amiga1200 with a overdrive HD, Pyramid  MidiInterface,
and  a  Trust  14k4  modem.  For the GUI development I have used (partially)
the excellent GadToolsBox V2.0b GUI-designer from Jaba Development.

EarTrainer V2.0 is a follow up on the V1.x, of course.
Version 1 only trained melodic intervals.


What's Next ?
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In order of importance:

 - Add an Amiga internal sound routine.
 - Add a staff bar to display all the note graphically.
 - Add a rhythm trainer
 - Add a melody trainer


If your feelings tell you differently: let me know !


The Author
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             5641 LL Eindhoven
             Holland

Any bug reports, suggestions please do !!!

Greetz, Dave.
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1.7 Table of spelled out Chords

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Table of all the used chord spelled out in intervals.
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 Maj   -  1 ,  3 ,  5
 min   -  1 , b3 ,  5
 dim   -  1 , b3 , b5
 aug   -  1 ,  3 , #5
 sus4  -  1 ,  4 ,  5
 Maj7  -  1 ,  3 ,  5 ,  7
 min7  -  1 , b3 ,  5 , b7
 x7    -  1 ,  3 ,  5 , b7           (also known as dominant 7)
 ø7    -  1 , b3 , b5 , b7           (also known as ø or half-diminished 7)
 o7    -  1 , b3 , b5 , bb7 or 6     (also known as diminished 7)
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+7     -  1 ,   3 , #5 ,   7          (also known as augmented 7 or #5/7)
mM7    -  1 , b3 ,   5 ,   7          (pronounced as minorMajor7)
s4M7   -  1 ,   4 ,   5 ,   7          (pronounced as sus4Major7)
s4m7   -  1 ,   4 ,   5 , b7          (pronounced as sus4minor7)
```

```
+7     -  1 ,   3 , #5 ,   7          (also known as augmented 7 or #5/7)
mM7    -  1 , b3 ,   5 ,   7          (pronounced as minorMajor7)
s4M7   -  1 ,   4 ,   5 ,   7          (pronounced as sus4Major7)
s4m7   -  1 ,   4 ,   5 , b7          (pronounced as sus4minor7)
```