MUSIC editor

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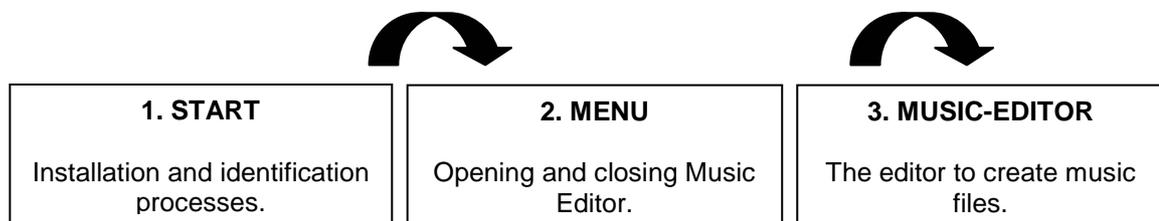
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1. INTRODUCTION

This application has been thought to be used by people with physical disabilities with special hardware and software needs.

With reference to the hardware, the application works with any eye tracking systems. As the user will use the eyes to interact with the application, the cursor will only be visible in the interactive buttons to avoid distractions, excessive work load or visual tiredness.

Regarding the software, the design of the application has been done according to the common specifications for this kind of users. Therefore, the size of the buttons, the space organization, the colour used or the interaction mode has tried to suit properly to the end user's needs.

When thinking about the topic of the application, it was found interesting to develop simple music software, as text and drawing software adapted to Eye Tracking technology already exists. With this music application the user can entertain itself and at the same time he/she can acquire basic knowledge about music theory.

The application is divided into 3 parts:

1. START	**2. MENU**	**3. MUSIC-EDITOR**
Installation and identification processes.	Opening and closing Music Editor.	The editor to create music files.

The first part (START) is different depending on if the application is downloaded from the web or if it is inside a CD. The CD application gives the user the chance to work from the CD or copy the application in the hard disk of the computer. The application downloaded from the web does not include this part and directly starts the application without asking the work mode.

2. SYSTEM REQUIREMENTS

➤ The application is optimized for a screen resolution of 1024x768 pixels. In bigger resolutions the application will appear centred in the screen but not filling the whole screen. With smaller resolutions the application will not appear properly.

➤ The allowed operating systems are Windows 98/ 98 SE/ ME/2000/XP.

➤ The application can work with any eye tracking systems that uses the windows mouse as gaze pointer.

➤ The computer must have a sound exit like external/ internal loudspeakers or headphones. Without this sound exit the user will not be able to hear the music sounds of the application.

3. APPLICATION

The **Application CD** contains the following files:

- m-e ikon.ico:
  The icon of the Application CD

- autorun.info:
  After having introduced the Application CD it runs the file START.exe that is placed inside MUSIC-EDITOR folder.

- START.exe
  This file is only the copy of a file inside MUSIC EDITOR folder; it is used only by the application, never by the user.

- leihoastart.exe
  This file is only the copy of a file inside MUSIC EDITOR folder; it is used only by the application, never by the user.

- MUSIC-EDITOR (folder)

  ➢ START.exe:
    Setup file that allows the users to install the application in the hard disk of a computer and creates a work folder for each new user.

  ➢ MENU.dxr:
    After having identified the user it allows 2 options: Opening the Music Editor (MUSIC-EDITOR.dxr) or closing it.

  ➢ MUSIC-EDITOR.dxr:
    It is the Music Editor's file.

  ➢ MUSIC CAST.cst:
    This file allows each user to save the music files created in the Music Editor. It will be copied in every user's work folder

  ➢ leihoastart.dxr
    This file contains the different error/warning windows that may be opened if the user makes a mistake during the installation or the identifying processes (wrong user name etc.)

  ➢ leihoamusic.dxr:
    This file contains the different error/warning windows that may be opened if the user makes a mistake while using the Music Editor (wrong music sequence length etc).

The **Web Application** contains only the MUSIC-EDITOR folder (and all the files inside of it).

4. START

4.1 Installation process

Before explaining the installation instructions, it is necessary to notice the difference between having the Application CD and downloading the application from the web.

The application have been thought to be installed from the Application CD, where the user can choose between copying the application to the hard disk of the computer or just working from the CD without copying the application.

Therefore, if the user has not the Application CD and he/she has just downloaded it from the Web the instructions he/she must follow are different, as he/she will not have to decide about working from CD or not, he/she just will be directly working from the hard disk of his/her computer. Let see both cases:

A- Web Application

MUSIC-EDITOR folder (see the picture in page 2) is the application available to be downloaded from the web. To work properly this folder must be placed inside one unit of the hard disk of a computer:

	C:\ MUSIC-EDITOR	E:\MUSIC-EDITOR	G:\MUSIC-EDITOR
	D:\ MUSIC-EDITOR	F:\MUSIC-EDITOR	(…)

Never place it inside another folder or a different directory from the examples given; the following examples will not work properly:

	C:\PROGRAM FILES\ MUSIC-EDITOR	C:\Documents and Settings\MUSIC-EDITOR
	D:\User Documents\ MUSIC EDITOR	E:\My works\ MUSIC EDITOR

(…)

After placing MUSIC-EDITOR folder inside a unit of the hard disk, the only thing the user has to do is entering START.exe.

B- Application CD

The first time you insert the Application CD, you will be able to either work from the CD without copying the application in the computer or install the application in the hard disk of your computer.

The second option is recommended because by working from the CD may the work speed may be quite slower. This is obvious, because if you choose the second option, the current application files will be copied in the hard disk and the new directory's application will be run, which allows a higher work speed. Once the application is installed in your hard disk the users don't need to insert the CD again.

Here you have the window where the user will be asked to choose the working mode:

Option 1: Working from CD.

If the user chooses to work from the CD the application will be run from the CD unit, which might be slower than running it from the hard disk.

The first time that CD Application is inserted in the current computer, there will be no users registered yet. Therefore, the next step in that case will be to ask the user to enter a user name to create a work folder with his/her name in C:\CAST\ (username folder).

If it is not the first time the CD is inserted in the computer, the application will look for the different users´ work folders placed in C:\CAST and then the user will be asked to say if he/she is a new user or not. For not registered users the application will display all the usernames (work folders) found in C:\CAST to the user to choose his/hers. In case of being a new user, he/she will be asked to enter a name (that it does not exist already).

Option 2: Working from the hard disk.

If the user decides to work from the hard disk, the application will provide him/her a list of the available hard disk units where he/she can install the application. Therefore, the user will be asked to choose one of the hard disk units.

In the next picture the window where the user must decide the unit where the application will be copied is shown:

After having chosen a unit, the application will copy the MULTI-EDITOR folder (with all the files inside of it) of the CD Application in the selected unit. After that, the new application of the hard disk will be run to improve the working speed (the copying process might take some time). To run the application by your self you must enter START.exe in MULTI-EDITOR folder.

4.2 Identification Process

Being the first user of the computer, the application will ask him/her to enter a user name and it will create a work folder with this name in C:\CAST\ (username folder).
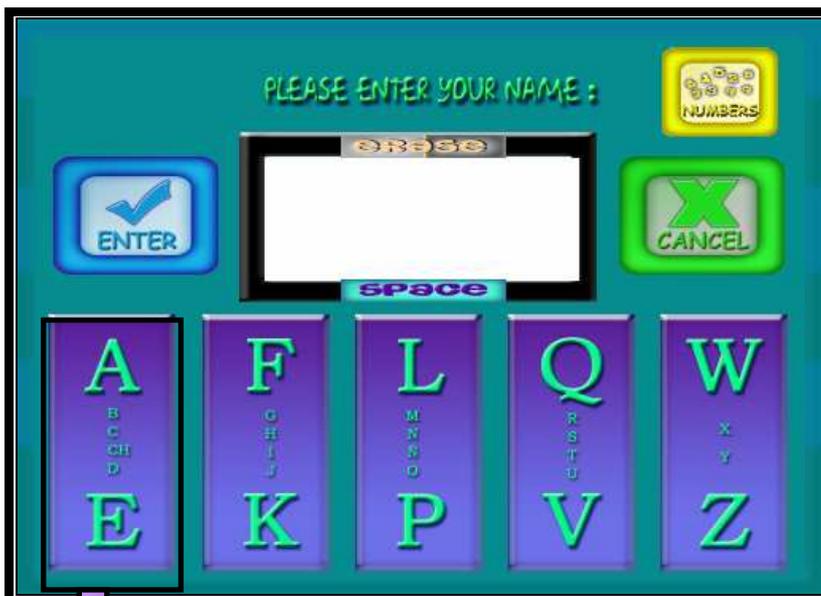
The next time the application is run from the hard disk, as it has been explained before, the user will be asked to say if he/she is a new user or not. If he/she is not a new user the application will provide him/her with all the usernames (work folders) that are found in C:\CAST in order to make the user choose his/hers. In case of being a new user, he/she will be asked to enter a user name (that has not been used before).

The next pictures show the process of identifying the user:
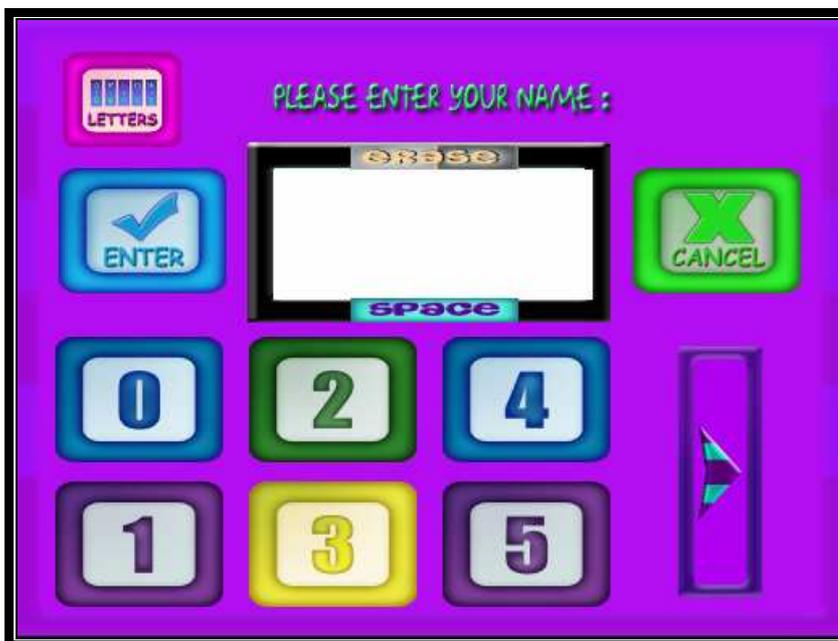

Option A: New User.

The next picture shows the text editor where the user must enter his/her name, only if he/she is a new user:

See next page A...F letters window

This window shows the letters from A to E that the user can use to create a user name.
By using the arrows the user can access the next letters (f…k, l…p, q…v & w…z).
The user can also go back to the general letters window (picture above) by entering the "letters" button or use the numbers (picture next page) by entering the "numbers" button.

This window shows the numbers from 0 to 5 that the user can use to create a user name.
By using the arrows the user can have access to the next numbers (6, 7, 8 & 9).
Here as in the previous window, the user also has access to the general letters window, erasing characters or writing a space in the user name.

Option B: Old User.

The picture below shows the window where the user must choose his/her user name, if he/she has a user name already:

When more than 8 user names are registered, 8 of them will be shown each time and the application will provide arrow buttons to let the user see the next/previous user names.

5. MENU

After the installation / identification process START.exe file will be closed and MENU.dxr file will be opened. This window will let the user either opening the Music Editor or closing it. The picture below shows this window:

6. MUSIC EDITOR

After opening the Music Editor the Menu will be minimized.
The first thing that the editor asks to the user it is to choose the interaction time (1s, 2s or 3s). The selected interaction time can be modified again at any moment if the user wants to. Here you can see the window where the user can choose the interaction time:

After having chosen the interaction time, the editor will show the user the instructions to give him/her an idea about how the editor works. The user can either continue reading the next instructions by entering the arrow button or start the application by entering "start" button. The user can go back to see the instructions at every moment he/she wants to. Here there are the 3 windows for the instructions:
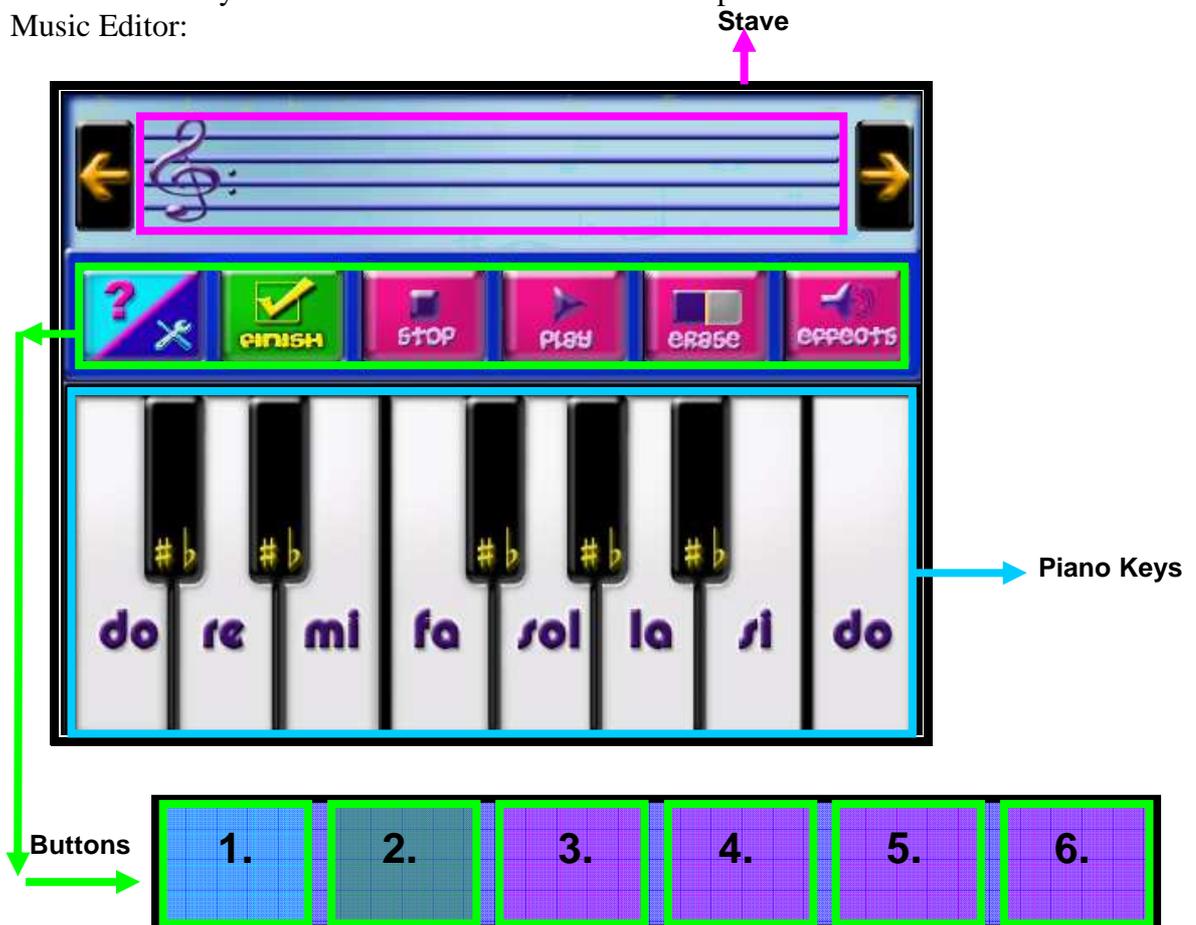
When entering Start button, the following window will be opened, where the user must decide what to do (setting a new file, erasing/opening existing one, exiting from the editor or going back to the instructions)
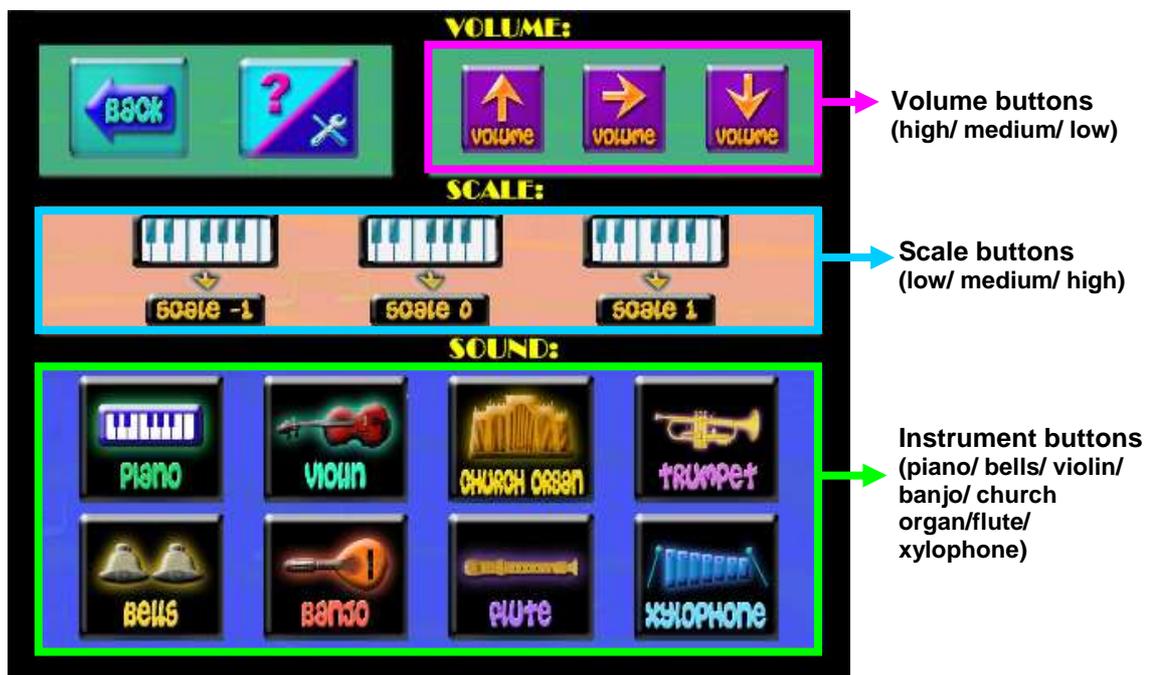

When starting the Music Editor the user will see the main window, where there is a piano that is used to create a music sequence. By entering the piano keys, the different notes will be heard as they are written in the stave. The next picture shows the main window of Music Editor:

See the button's functions in next page:

1. Help/Tools button:
   This button opens a window where the user can either go to see the instructions or change the interaction time.

2. Finish button:
   This button opens a window where the user can either save the music file, exit from the editor or go back to the main window.

3. Stop button:
   This button stops playing the musical sequence.

4. Play button:
   This button starts playing the musical sequence.

5. Erase button:
   This button erases the last musical note from the stave.

6. **Effects button**:
   This button opens the "Effects" window (next page) where the user can choose the volume, the scale or the musical instrument of the sound.

The next window shows the "Effects" window where the user can choose different features of the sound:

If the user decides to save the file, the same text editor we have explained for the installation/identification processes will be opened.
When the user decides to exit from the editor, the editor will be closed and the Menu window will be maximized again, where the user will be able to definitely exit or enter to the application again.

7. ERRORS

When the user decides to exit from the editor, the editor will be closed and the Menu window will be maximized again, where the user will be able to definitely exit or enter to the application again.

This error can occur during the installation:

No hard disk units selected:

If the user has not chosen any hard disk unit he can not enter "choose" button because the application must be copied to a unit.

This error can occur when opening start.exe:

Missing files:

Inside every user's folder (C:\CAST\ "username") there must be the work file MUSIC CAST.cst that enables the user to save the music files. If this file is missing, the application provides the user an empty work file.

These errors can occur when entering a user name:

1. The user name only has "space" or it is empty:

The user name can not only have "space" characters and it must have one character at least.

2. The user name is too long:

The user name must be as long as 10 characters and as short as 1 character.

3. Repeated user name:

The user name must be new, if the name has already been used you must write a different name.

There are some common errors that can occur when opening or deleting a file:

1. No files saved:

If the user has not saved any music file before, he/she will not be able to open/delete any file.

2. No files selected:

If the user has not chosen any file name he can not enter "open" or "delete" buttons.

There are some common errors that can occur when editing the music file:

1. Incorrect sequence length:

The musical sequence must be as long as 3 staves and as short as 1 note.

2. Entering "stop" button:

This button should only be entered when the sequence is playing.

3. Entering "play" button:

This button should only be entered when there is something written in the stave, if the sequence is empty it can not be played.

4. Entering the "arrows":

With the arrows of the stave the user can access to the next/previous musical notes but only if they exist.

There are 4 reasons why the file can not be saved:

A) Empty file:
The music file can not be empty; it must have one note at least.

B) The user name is too long:
The name must be as long as 10 characters and as short as 1 character.

C) Repeated name:
The name must be new, but if it has been used before the user has the possibility to rewrite the existing file or choose another name.

D) The name only has "space" or is empty:
The file name can not only have "space" characters and it must have one character at least.