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Soundboard PC & Soundbard EZ-B tutorial.

This tutorial will guide you through how to set up and use the "Soundboard" controls to give your robot the ability to have sound effects and play music without any additional hardware. This tutorial will explain the various soundboard controls, what they do, and will give a couple of examples that you can play with.

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Step 1. Soundboard Control Options.

In EZ-Builder, there are two soundboard controls. The two controls are a bit different from each other , but there is one major difference between the two...
Soundboard (PC): This plays any audio files stored in this control through your computers speakers.
Soundboard (EZB): This will send and play any audio files stored in this control through your EZ-B v4's built in speaker. The name of the Soundboard for the EZ-B v4 in the menu is referred to as (EZB), but the control will have the default name (V4).

So lets have a look at the control options.
When a soundboard is added to your project, you will see a few options which have been colour coded for this tutorial. First, the Soundboard (PC).

Red: "Stop:" Stops any audio files from playing.
Yellow: This is where the track number will be shown.
Green: When blank, clicking here will allow you to add an audio file. When the box has a file in it, clicking it will allow you to change the audio file.
Purple: Will play the corresponding audio file.
Brown: Will delete the corresponding audio file.
Blue: Takes you to the help section.
Orange: Deletes the control. (NOTE: If you have soundboard control commands in any scripts, it's advisable to remove these when you delete the soundboard).
On the "Soundboard v4" control, you will see couple of extra options...

Green: This is the volume control slider for the "Soundboard v4" control.
Orange: Clicking this box will open the track editor where by right clicking your mouse, you can choose what part of the audio file you would like to play it from, and you can add scripts to a section of the audio file that will trigger the script when the part of the file is reached.

Also, on both the (PC) and (V4) soundboards, by hovering the mouse pointer over the edge of the controls and holding down the left mouse button, you can resize the controls to a size of your choice.
Having a large control is great for editing the control and adding tracks.
Where as having it small is great if you play the sound files from scripts as this makes more room on your EZ Builder project windows to add other controls.
Next, we will set up a soundboard and add a track to it.

Step 2. Setting Up a Soundboard.

Both of the soundboards can play WAV and MP3 file formats, so you will need your audio files in these formats and stored in a folder on your computer to start with. As both of the controls for the most part have the same options, we will use the "Soundboard (PC)" control in this example. First off we need to add the "Soundboard PC" control to our project.
1.) Open up the most recent copy of EZ-Builder, then click on "**Project**", "**Add Controls**", then click on "**Audio**" where you will see the two soundboard control options. Click on "**Soundboard PC**" to add this to your project.

2.) As an optional choice, you can rename the soundboard. This is useful as you can add multiple soundboard controls to any one project. Click on the "gear" icon on the control and rename your soundboard, then click "**Save**".

3.) Click on the blank audio track box, then navigate to your file that contains your audio files, then double click on the audio file you want to add.

NOTE: If when the popup window appears but does not display your audio files in your chosen folder, you may need to click on the file drop down box and either select "MP3 Audio" or "WAV Audio" option. The screen shots below shows that the first one does not contain any WAV files. Selecting the MP3 option then displays all of the MP3 files in that folder.

4.) Your audio file will now be added to your soundboard. The process is exactly the same for adding audio files to the soundboard v4 control.

5.) Now that the audio file is added, on the soundboard (PC) control you can click "Play" to test your file. On the soundboard (v4) control, nothing will play until the EZ-B is connected to the EZ Builder project.
In the next step, we will look at playing soundboard audio files with a script.

Step 3. Soundboard Scripts.

So with our "Soundboard (PC)" or "(V4)" control added which now includes an audio file, we will now go through how to play this file with a script.
1.) From the EZ-Builder menu ribbon, click "**Project**", "**Add Controls**", "**Scripting**", and "**EZ-Script**". Once the script control has been added, click on the "Script Config" tab to open the script editor.

2.) Right click on the script editor text input field to bring up the "Cheat Sheet" commands for your project (or click the "Cheat Sheet" tab on the top right of the editor). Look down the list and hover over the soundboard option. This will expand the window and display the control commands for the soundboard (mentioned in step 1). For this example, click on the **ControlCommand("Soundboard", Track_0)** command to add it to the script.

3.) On a new line, write the following script command...

```
Print("Wake up lazy bones.")
```

then click "**Save**".

4.) Now click "**Start**" on the script control. The sound file will now play, and the "Print" message will show up in the debug window...

Here is another simple example you can use. This will act as an alarm clock so when 7:30am is reached, the robot will say something, then play the audio file when it finishes speaking.

```
WaitUntilTime(7, 30)
SayWait("Hey you. Get out of bed. It is time to get up.")
ControlCommand("Soundboard Test", Track_0)
```

Press "**Start**" on the script and let it run. When the time is reached, the script will trigger. If you have multiple audio tracks, you can use the command to play a random choice of audio file...

```
ControlCommand("Soundboard Test", Track_Random)
```

And adding the following script will stop the audio file from playing...

```
ControlCommand("Soundboard Test", Stop)
```

The next step will explain using scripts within the "Soundboard (EZB) control.

Step 4. Soundboard (EZB) Aditional Menu Options.

When clicking on the "Edit" on a sound file in the soundboard (EZB) control, you will now see is a visual waveform spectrum of the audio file. There are also some extra control options...
Play: Plays the audio file
Stop: Stops audio file playback
Edit Script: Opens up the script editor.
Delete: Deletes the script.
Close: Closes the menu.
You will also see a small clock in the top left of the waveform window which will change when you drag your mouse pointer over it. There is another black clock which gives you a run time of the audio file when played a "Starts at" clock which tells you at what point a script will run, and a dialog box which displays your added scripts.
There are further options which are used for modifying script and audio file behavior which are found by moving the mouse pointer to a position on the waveform, then right clicking on the for the option list for this position.

Add Script Here: Adds a script to the selected position.
Delete selected script: Deletes the script from the selected position.
Play from here: Plays the audio track from the selected position.
Set selection start: Sets the audio track starting position for selected waveform position.
Set Selection End: Sets the audio track finishing position for selected waveform position.
Clear Range: Clears any "Start" and/or "End" positions added to the waveform.
Delete Selection: Deletes everything in between any set "Start and "End" positions.
Cut Selection: Cuts everything in between any set "Start and "End" positions.
Copy Selection: Copies everything in between any set "Start and "End" positions.
Paste Selection: Pastes everything in between any set "Start and "End" positions.
Delete Everything Before Here: Deletes the part of the waveform before the selected area.
Delete Everything After Here: Deletes the part of the waveform after the selected area.
Actions: Will add auto position actions instantly to create dances and animations.
So we have seen in step 3 how easy it is to play a sound file within a script, and looked at what the options do in the soundboard (EZB) control do. So to do something a little different, and run a script using the "Soundboard (V4) control, click on the link below which will take you to another step by step tutorial created by DJ Sures, which will guide you through the process.
Soundboard (EZB) Script Tutorial.

Step 5. Not Using a Soundboard for Auido.

Sometimes, using a soundboard may not be an option for you. This could be because the file size and amount of your sound effects or recorded speech phrases might be too large, or you want to make your robot become a jukebox and have access to your music library. As mentioned in "step 1", there are limits to how many audio files you can add to a soundboard which ultimately comes down to your own computers system resources.
So how do we play audio files without a soundboard? We use script. Here's one way of doing so.
1.) From the EZ-Builder menu ribbon, click "Project", "Add Controls", "Scripting", and "EZ-Script". Once the script control has been added, add another one. On one of the script controls, click on the "Script Config" tab to open the script editor.
2.) Rename it something like "Play Music". I would at this point say add the following script, but this script will not work for you...

```
PlayAudio("C:\Users\steve_000\Desktop\EZ Tutorials\Soundboard tutorial\01 3am Eternal 1.mp3")
```

The reason why it most likely won't work for you, is because this is going to access a music file I have on my computer, and your command pathways will be different for you. So to help you, here is a breakdown of the script line.
PlayAudio("") is the command you can use. This will play the audio file. This you have to use, putting the rest of the command path in between the speech brackets.
C:\Users\steve_000 is the computers hard drive name and my user name I am using for this example. This will be different to yours.
Desktop\EZ Tutorials\Soundboard tutorial is the name of the three folders the audio file is stored in (Desktop, EZ Tutorials, and Soundboard tutorial.) Again, this will be different for you.
01 3am Eternal 1.mp3 is the name of the music track. This will also be different for you, but notice the end of the path... it ends with**.mp3**. As with the soundboards, only MP3 and WAV files can be used.
3.) To find the correct command path you need, open the folder stored on your computer where the audio file is stored.
4.) Right click on the audio file name, then on the list, click on "**Properties**".

5.) On the "Properties window, you will see two parts of the command path you need. Copy and paste the part highlighted in red in to your scrip after "**PlayAudio(**" then go back to the properties window and copy/paste the audio files name, highlighted in green.

6.) Before you paste the file name, add a backslash **[/b] at the end of the what you have pasted already, then paste the file name after the slash, and the closing [b]")** so you will have something like the following...

7.) Save this script, then open the script editor on the other script control.
8.) Rename this "Stop Music", and write in the following script...

```
StopAudio()
```

9.) Save this script, and now you are ready to test it. Press "**Start**" on the "Play Music"

control and your audio track will begin to play. To stop the track from playing, press "**Start**" on the "Stop Music" script.
Instead of using two script controls, you can use a script manager and add multiple tracks. The only limit to how many audio tracks you can have, is the amount of audio tracks you actually have.
Another option is to add a "Speech Recognition" control, put in "Robot. Play track one" in the "Phrase" list, and add the control command in the "Command" list. Then you would have a voice activated audio system. Pretty cool. *cool*

There is another tutorial written by one of EZ-Robot's valued resident experts, Justin Ratliff, who explains different ways to play audio without a soundboard.
How To: Control Windows Media Player
And this one gives a solution to playing audio file using WinAmp media player and CLEveR command prompts that gives you more control over your media files.
Play Audio with EZ_Builder Using WinAmp.

Conclusion.

Below is a link to an excellent tutorial created be one of EZ-Robots valued community forum members, Dave Schulpius, who goes through the steps of adding amplified or non amplified speakers to the EZ-B for improved sound quality where the EZ-B speaker is just not enough for your needs...
Breaking Out the Sound from the EZB4
As always, any questions or suggestion can be submitted on the Community Forum.
Happy Building.
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