

Creating a Sample Set

For this project, you will be mapping 5 (or more) samples of your choosing to a MIDI keyboard. These can be sound effects, music tracks, loops, etc.

Part I: Getting Your Samples Ready

1. First, create a folder in your computer specifically for this project.
 - a. You can put your samples in this folder to stay organized.
2. You will need to convert any samples that you want to use into WAV files.
 - a. Search for online converters based on the file extension for the excerpt that you have (mp3 to WAV, m4a to WAV, etc.).
 - b. If there is a YouTube video containing audio that you would like to use, use a YouTube to WAV converter website.
 - c. If you find something on SoundBible, you are able to download files from this site as WAV files.
 - d. If you want to use a loop from GarageBand, you will need to add it to your project and then export it as a WAV file by following the steps shown in Step 3 below.
3. You might want to extract a very short sample from a full song. If you need to trim your audio file to create your desired sample, you can edit it in GarageBand.
 - a. Go back to your folder and find the audio track you plan to use/trim. Click and drag this into GarageBand.
 - i. If you are adding multiple audio tracks to this GarageBand project, make sure they each have their own independent tracks and aren't all contained in one single track; this is important for proper exporting.
 - b. Trim the track until you have a sample that you are happy with.
 - i. Be sure to zoom in to get precise edits and to see the waveform more closely.
 - ii. To trim, make sure your track is highlighted, and press ⌘T; you can also go to "Edit" and click on "Split Regions at Playhead".
 - iii. Make sure the playhead is exactly where you want to trim the audio file.
 - iv. Delete the parts of the audio file that you will not be using by clicking on them (highlighting them) and pressing delete.
 - v. If you have a sample that you want to loop, be sure to check if the loop is seamless before exporting the trimmed sample.

1. Press C (cycle) and edit the yellow cycle area so that the entire sample will loop.
 2. You may have to zoom in to get a precise cycle.
 - c. Any samples you have will need to be exported as WAV files so that they can be triggered by the sampler in GarageBand.
 - i. If you have multiple tracks in your project, follow these steps to export each track separately:
 1. Make sure the metronome is off before exporting anything.
 2. Solo the single track that you want to export.
 3. Select the track by shift-clicking it.
 4. Go to “Share”, and choose “Export Song to Disk”.
 5. Name your sample, choose a location to save it to (this should be your samples folder for this project), and make sure “WAVE” is selected as the exported format.
 6. Make sure you check the box that says “Export cycle area, or length of selected regions (if Cycle is turned off).”
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Part II: Mapping Your Samples to a MIDI Keyboard

1. In GarageBand, create a new project, and add a new Software Instrument track.
2. Make sure Smart Controls is open; the shortcut to open this is B.
 - a. Under Plug-Ins, look for where the software instrument is shown in a blue rectangle (E-Piano). If you hover over this with your mouse, you will see up and down arrowheads on the right side of the rectangle. Click on this, then hover over AUSampler, and then click on Stereo.
 - b. At this point, you might want to change the name of the Software Instrument Track to something like “Sampler”.
3. When the AUSampler opens, on the left side of the page will be a section for Layers and Zones. At this point, you need to decide how you want your samples to be triggered.
 - a. You can set the sampler up so that when you press a key down and hold it, the sample will play until you take your finger off of the key; this is known as “Key Down”.
 - b. You can also set the sampler up so that when you press a key down, the sample will play entirely, even when you take your finger off of the key; this is labeled “Key Down (Ignore Key Up)”.
 - c. If you want to combine the two, you will need 2 layers. If you only plan to use one type of triggering system, you can stick with 1 layer.

- d. If you are creating a second layer, either press the “+” on the bottom of the screen when “Layer 1” is highlighted to create a new layer, or press the gear icon on the bottom of the screen and then click on “Create New Layer”.
4. Next, you should set up the way the samples will be triggered for each layer that you have. Make sure you are in the section titled “Key Mappings” (this is shown at the right of the screen).
 - a. Where it says “Trigger:”, either leave it at the default “Key Down” or change it to “Key Down (Ignore Key Up)”.
5. Now it is time to add your samples to the AUSampler.
 - a. Click on the layer that you will be adding a sample to.
 - b. Then click on the gear icon at the bottom of the page and select “Add Samples...”.
 - c. Locate the sample that you will be adding, and double-click on it.
6. You will notice that under each layer, there will be a zone titled “Sine 110 Built-In”. You will want to remove this, otherwise the sine-wave sound will also play in the sampler.
 - a. Make sure this zone is highlighted, and then click the “-” symbol at the bottom of the screen to remove it.
 - i. You cannot remove this zone until you have at least one other zone added in the layer.
7. Now, decide where you would like to map your samples to.
 - a. You will need to decide on a note and a register number.
 - i. “4” is the register number for the middle of the keyboard.
 1. Register numbers change based on the note C.
 - a. For example, G3, A3, B3, C4, D4, etc.
 - b. When you decide on a MIDI key, put that same note in both boxes of the “Key Range” section.
 - i. If you want to use a sharp note, add “#” after the note letter.
 - ii. If you want to use a flat note, add “b” after the note letter.
 - c. On the “Key Mappings” page, look for where it says “Tracks Pitch.” Turn this off if you want your sample to stay at the original pitch no matter what key you assign it to.
8. Finally, you can make some creative decisions about how your samples will be heard.
 - a. If you want your sample to loop, check the box next to “Looping” on the ‘Key Mappings’ page.
 - b. Notice that you can adjust the “Volume”, “Pan”, and “Tuning” for your samples.

- c. You can set up your samples to play at the same volume level no matter how lightly or hardly you press the MIDI keys (velocity). If you want your samples to all play at the full volume level and not depend on key velocity, follow these steps:
 - i. Go to the “Connection Editor Pane”.
 - ii. Under “Instrument”, click on “Key Velocity”.
 - iii. You’ll see a velocity curve on the page. Click on the dot at the bottom left of the curve (next to the number -96) and drag it up to the top left corner.
 - iv. Now, all of your samples for that layer will play at a single dynamic level and will not be dependent on how hard you press a MIDI key.

9. IMPORTANT!

- a. Before you close out of the AUSampler or quit GarageBand, you have to save the changes that were made to the sampler.
 - i. On the top left of the sampler, you will see the word “Manual” and a drop-down menu. Click on this, and then click on “Save As”. Name your sample set, and choose a location to save this file (ideally in your folder for this project).
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