

## EARSKETCH: LEARNING WITH TUNES

What makes learning a programming language difficult for you? The complexity of code or the lack of understanding of it? For most people, it's the latter.

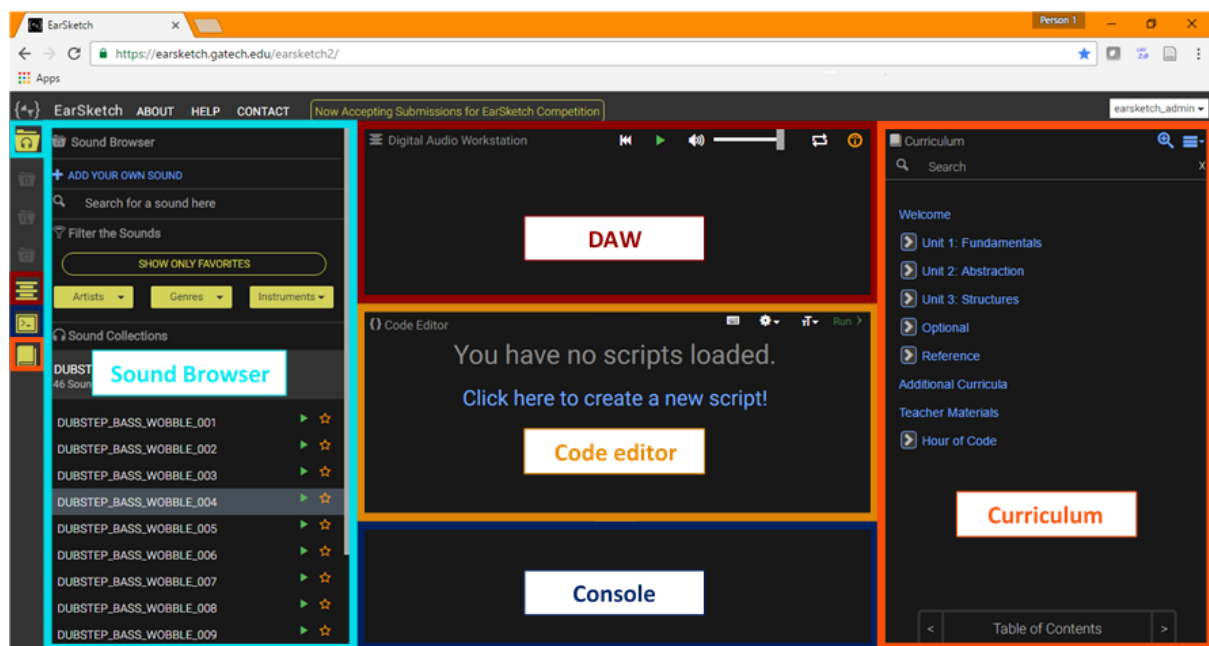
Do you find yourself lost in the woods of the syntaxes and structures, in the maze of everything and nothing simultaneously?

If you did, this article is for you; worry no more. Let's explore this fantastic website that will aid you in making the journey of learning the basics exponentially enjoyable, all while laying a solid programming foundation.

Earsketch is a free educational programming environment to teach coding in Python and JavaScript through music composition and mixing. To put it another way, create music algorithmically using fundamental computing concepts. It emphasises bringing fun tunes to the boring codes and enabling output-oriented learning. It brings forth all the learnings and puts it into a hands-on audiovisual concept, assembling so much sense into why you are doing what you are doing.

Let's dive into the website now.

### *Exploring the platform*



The curriculum:

The guide with several sections, summaries, quizzes, videos to pave your path into programming using Earsketch. In laymen's terms, it's like the course textbook.

The code editor and console

This is essentially where you write the code and, the console shows the execution stage and any errors.

The digital audio workstation:

It shows the output or the music created and all manipulations you do on it. You can listen to the music you've coded here.

Content Manager:

Sounds contain all the sounds available for you to experiment on and provide a space to add in your original tunes.

Scripts stores the codes of all the music you have created or mixed.

API contains all the functions that can create or manipulate tunes.

Now that we are done with exploring the platform let's choose our language and get set code.

If you are interested in exploring further on your own, here is a roadmap for you, but if you are someone like me who would love to go with a sample first, don't worry; I've got you covered just skip the next paragraph.

Learn about data types and use the functions `fitMedia()` and `setEffects()` to add audio clips and effects to your song. Write your code under the instructor's guidance, if necessary, and start composing your dream song. You can choose to make it interactive by asking for user inputs and conditionals. Add your twist to the existing audios or create a new one from scratch. Finally, debug your code, and voila, you're good to go. Run the program and let your ears be blessed with the masterpiece you've created.

Here's a sample code to get started.

```
# Set up
from earsketch import *

init()
setTempo(120)
# Music
chord = RD_UK_HOUSE__5THCHORD_2
secondaryBeat = HIPHOP_BASSSUB_001
mainBeat = HOUSE_MAIN_BEAT_003
fitMedia(chord, 2, 1, 16)
# Add effect between measures 1 and 16 moving from -60db to 5db and back down
setEffect(1, VOLUME, GAIN, -60, 1, 5, 12)
setEffect(1, VOLUME, GAIN, 5, 12, -60, 16)
fitMedia(secondaryBeat, 2, 1, 12)
# Add effect
setEffect(2, DELAY, DELAY_TIME, 500)
fitMedia(mainBeat, 3, 1, 8)
```

```
# Add effect
setEffect(3, REVERB, REVERB_TIME, 200)
# Finish
finish()
```

Output:

The screenshot displays the EarSketch digital audio workstation (DAW) interface. On the left is the 'CONTENT MANAGER' with tabs for 'SOUNDS', 'SCRIPTS', and 'API'. The 'SOUNDS' tab is active, showing a search bar and filters for 'Artists', 'Genres', and 'Instruments'. A list of sound collections and individual sounds is visible, including 'CIARA\_MELANIN\_BEAT', 'CIARA\_MELANIN\_VOCALES', 'CIARA\_ROOTED', 'CIARA\_SET\_BEAT', 'CIARA\_SET\_PERCUSSION', 'CIARA\_SET\_TALK', 'CIARA\_SET\_THEME', 'FEATURED ARTISTS (172)', and 'RECOMMENDATIONS'. The main workspace is divided into three sections: 'EFFECTS', 'CODE EDITOR', and 'CURRICULUM'. The 'EFFECTS' section shows a timeline with various audio tracks and effects like 'RELATIVE GAIN', 'RELAY DELAY TIME', 'HOUSE MAIN BEAT', and 'HOUSE MAIN'. The 'CODE EDITOR' section shows a script with the following code:

```
7 # Set up
8 from earsketch import *
9
10 init()
11 setTempo(120)
12 # Music
13 chord = RD_UK_HOUSE_5THCHORD_2
14 secondaryBeat = HIPHOP_BASSSUB_001
15 mainBeat = HOUSE_MAIN_BEAT_003
16 fitMedia(chord, 2, 1, 16)
17 # Add effect between measures 1 and 16 moving from -60db to 5db and back down
18 setEffect(1, VOLUME, GAIN, -60, 1, 5, 12)
19 setEffect(1, VOLUME, GAIN, 5, 12, -60, 16)
20 fitMedia(secondaryBeat, 2, 1, 12)
21 # Add effect
22 setEffect(2, DELAY, DELAY_TIME, 500)
23 fitMedia(mainBeat, 3, 1, 8)
24 # Add effect
25 setEffect(3, REVERB, REVERB_TIME, 200)
26 # Finish
27 finish()
```

The 'CURRICULUM' section on the right shows 'Unit 1: Compose and Add Beats' with a description: 'In this unit you will learn how EarSketch works, you will place sounds (clips) into your music, debug your code, customize your song, and add beats based on your musical genre.' It also includes a video player showing a tutorial.

We did start by knowing the website called EarStruck and did end up creating a piece of sample music using coding. Explore more of this and as you grow, start layering it with more complex codes. I hope this makes your coding journey much more interesting and interactive. I wish you luck with your prospects in coding and music. Let's get your creative juices coding!