

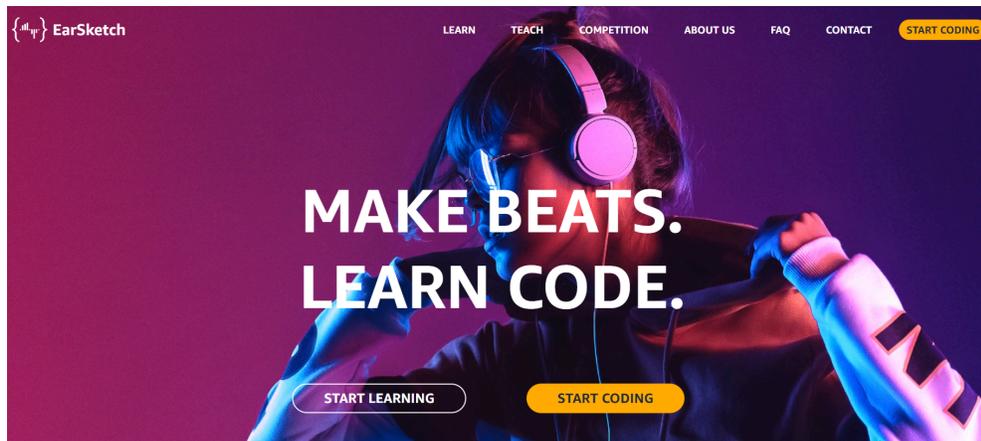


Code a Hip Hop Break-Beat with EarSketch

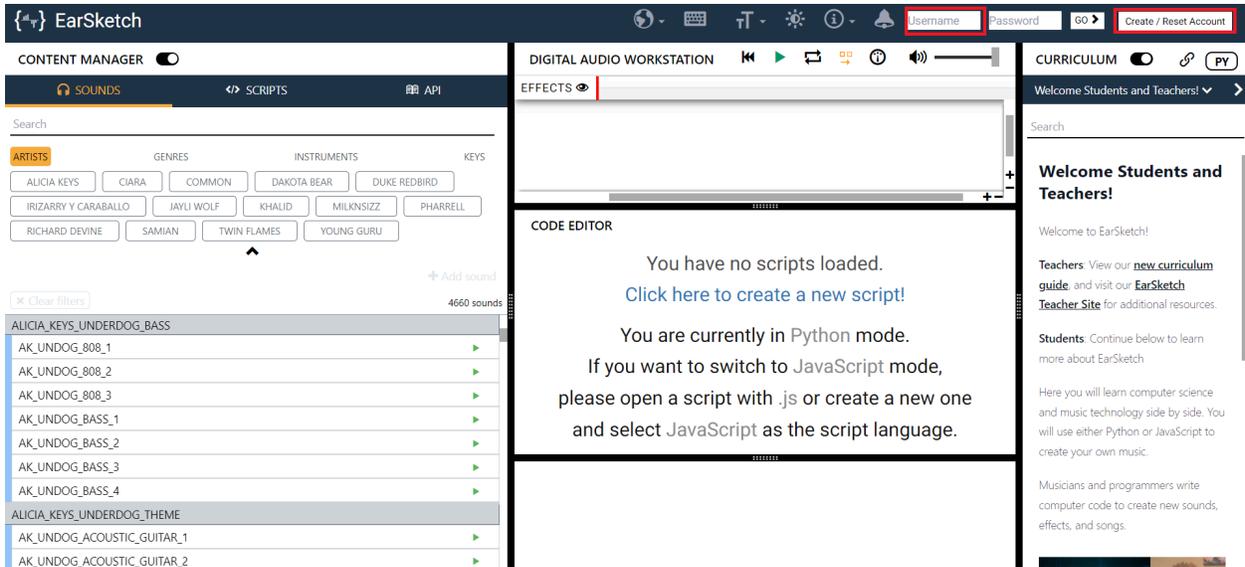
Hip Hop's first night started with a party in the Bronx, and its roots still continue in the music that we hear today. One of the pillars that Hip Hop music was built upon is the sound of drums and other percussion instruments. At Hip Hop's first party DJ Kool Herc (Clive Campbell) played songs that people liked to dance to in 1973, like [James Brown's Payback](#) and [Apache by Michael Vinier's Incredible Bongo Band](#). Herc noticed that people really liked the break section of each record where most of the instruments drop out and just the drums were left in the track.

Since these parts of the record were short, Kool Herc looped the breakbeat to allow the music to last as long as he needed it to. For this hour of code you will construct a breakbeat based song with a four bar loop. Each bar is a count of four, and your fourth bar of the music should be different from the first three bars.

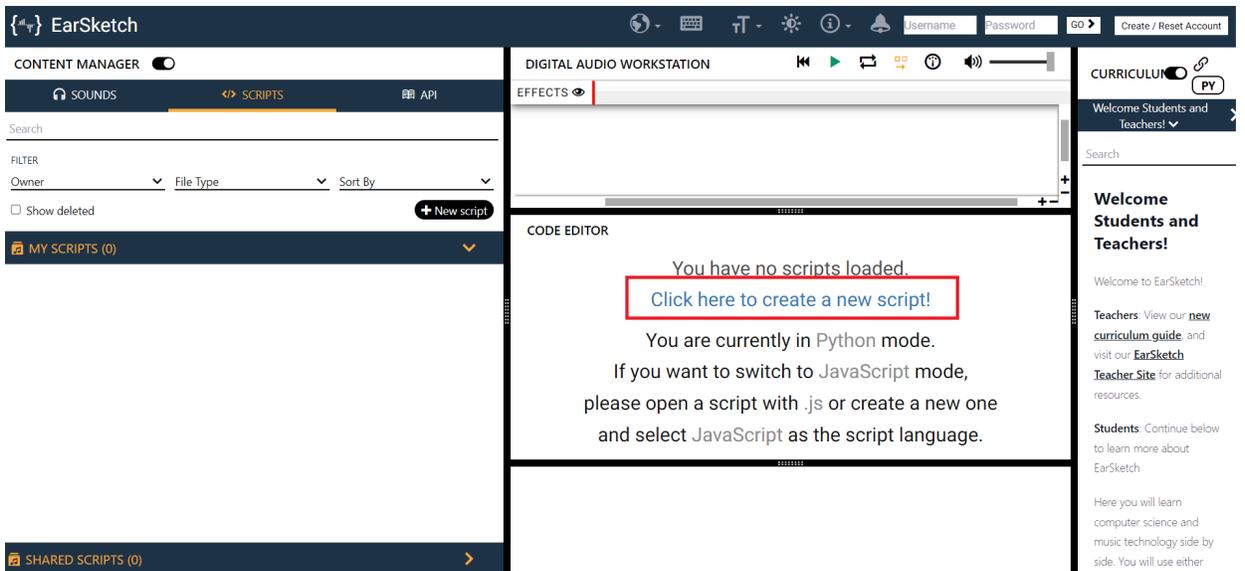
Visit <https://ears sketch.gatech.edu/>, and click on the start coding button



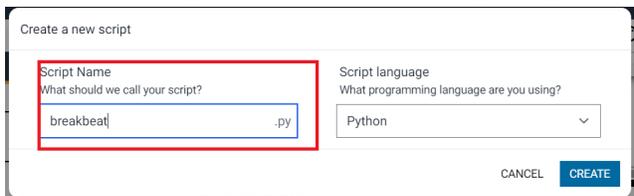
Create an account if you don't already have one with EarSketch



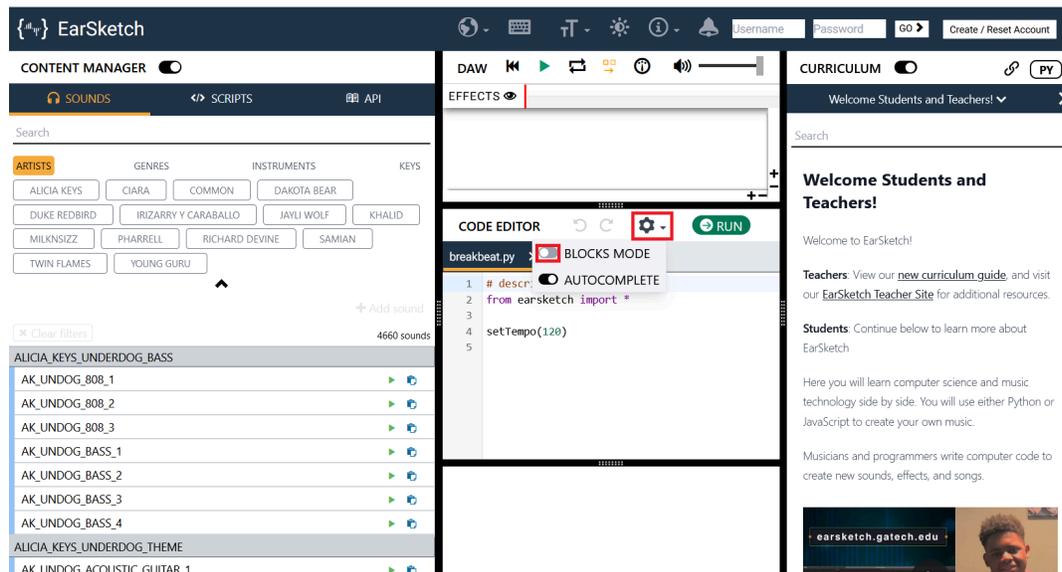
Click the link in the code editor window to create a new script. Here is where you will write code to create your music.



Give your script a name so that you can come back to it later. You can also select the language you'll be coding in. We will be working in Python for this Hour of Code.



Go to the code editor window, and click on the gear to select blocks mode. This can be helpful if you haven't written code in Python or any other language before.



Your code editor will change the code to blocks of text, so you won't have to know the functions (commands) Earsketch uses to make music. The block on line 2, tells our program that it has access to all of the music making functions Earsketch provides. The block on line two sets the tempo or speed of the song that you will be creating.

You will be creating a song with two breakbeat-like samples. One sample will be used for the first three bars (counts of four), and the other sample will be used for the last bar. We will choose our sounds for each bar first. EarSketch has over 4000 sounds to choose from, so we will narrow that down a bit together. Ciara's song "Set", has a number of breakbeats that we can remix for our own song.

Go to the Content Manager, click on Artists and click on Ciara. Below the button that says clear filters, scroll until you see a section that says CIARA_SET_BEAT

The screenshot shows the EarSketch interface. On the left, the 'CONTENT MANAGER' is open to the 'ARTISTS' tab, where 'CIARA' is selected. Below the artist filters, a list of sounds is shown under the 'CIARA_MELANIN_BEAT' category. The 'CODE EDITOR' on the right shows a script for 'breakbeat.py' with the following code:

```

1 #description:
2 from earsketch import *
3
4 setTempo(120)
5
6 from earsketch import *
7 setTempo(tempo)
8 setTempo(startTempo, start,
9 fitMedia(sound, track, start

```

Let's pick your first sample. Click on the green play buttons next to each of the samples to preview them.

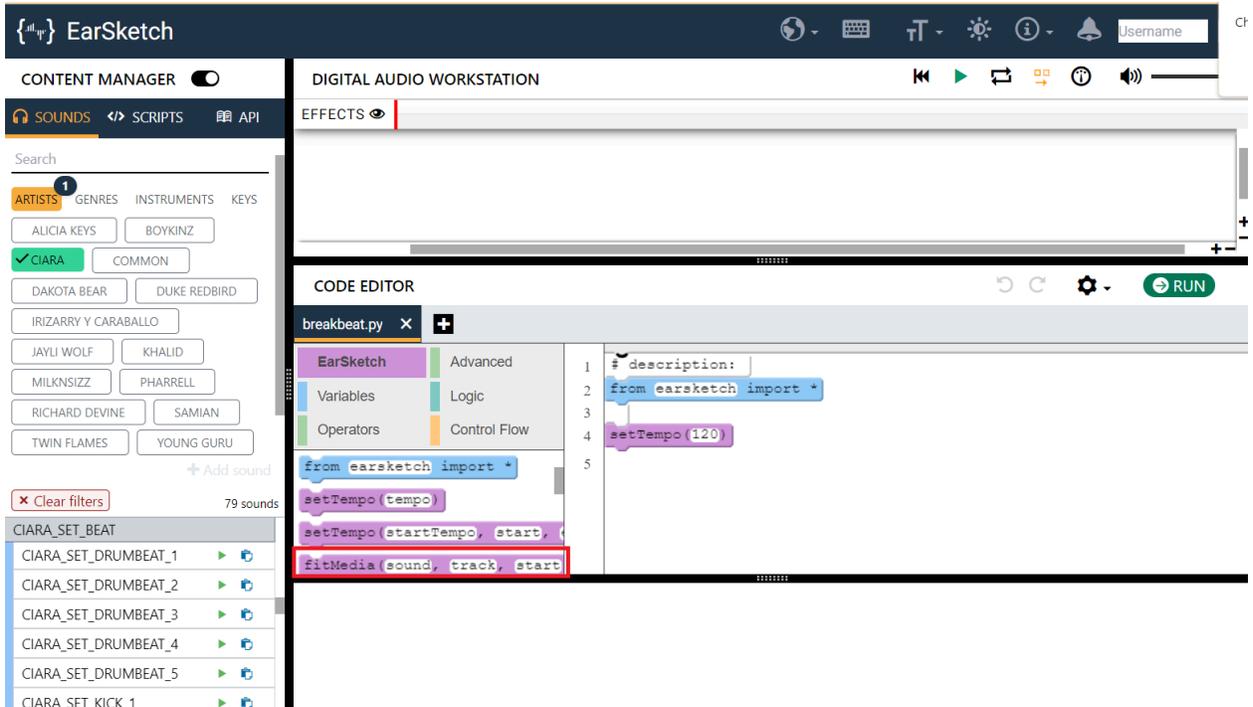
The screenshot shows the EarSketch interface. On the left, the 'CONTENT MANAGER' is open to the 'ARTISTS' tab, where 'CIARA' is selected. Below the artist filters, a list of sounds is shown under the 'CIARA_SET_BEAT' category. The 'CODE EDITOR' on the right shows a script for 'breakbeat.py' with the following code:

```

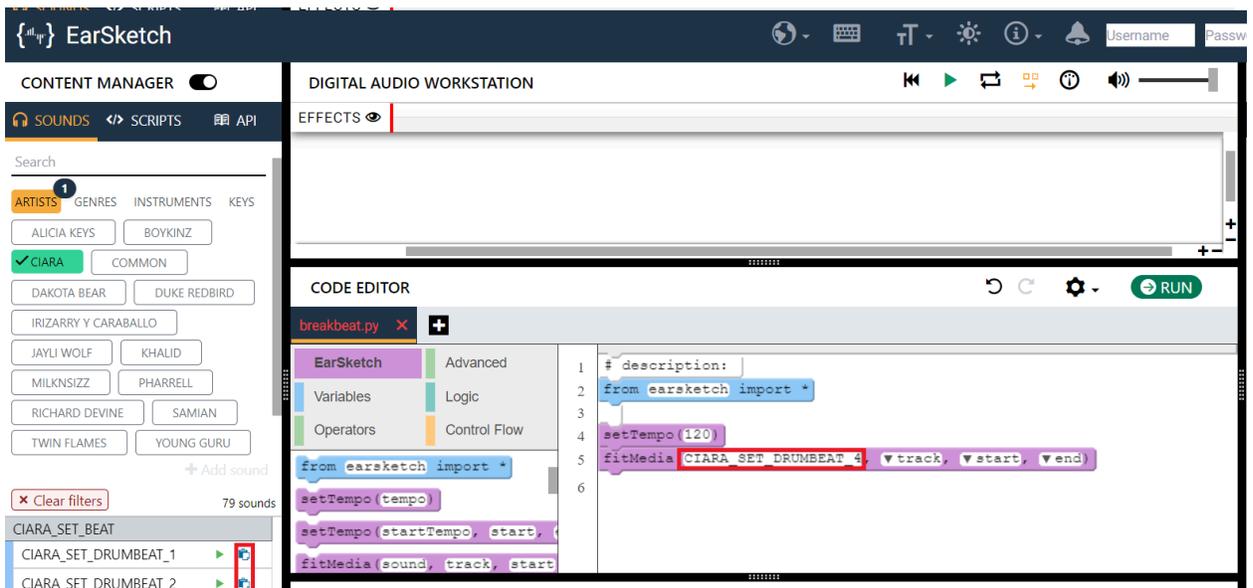
1 #description:
2 from earsketch import *
3
4 setTempo(120)
5
6 from earsketch import *
7 setTempo(tempo)
8 setTempo(startTempo, start,
9 fitMedia(sound, track, start

```

Once you've found a sound that you like we will use a fit media block to play the sound in EarSketch. Grab a fitmedia block and drag it to line 5.

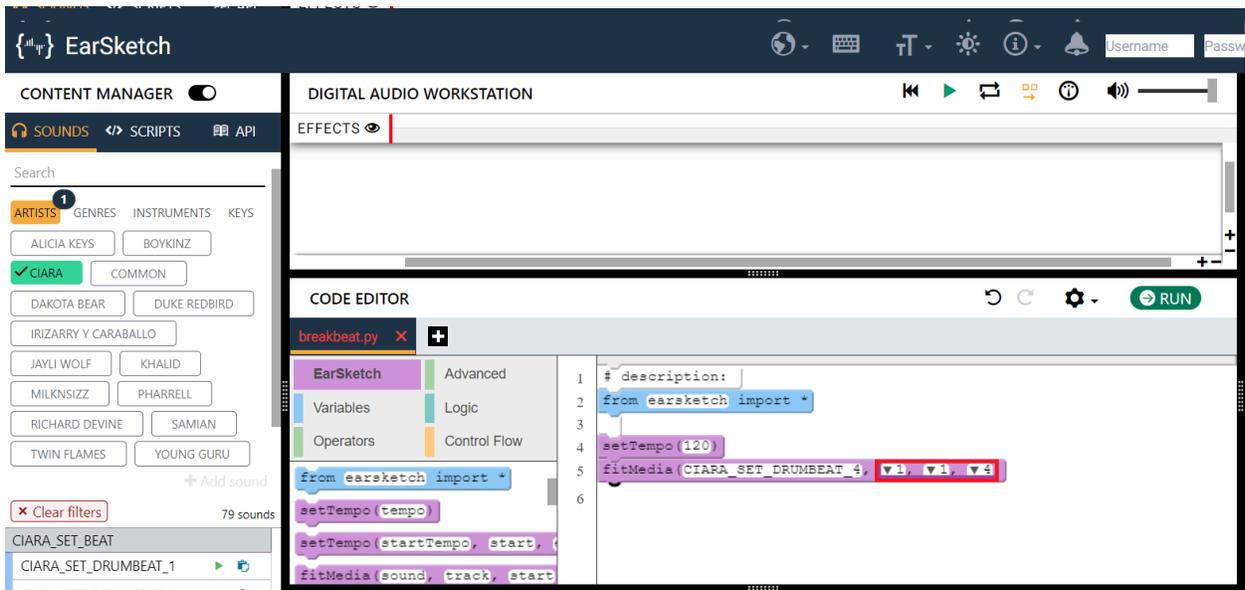


Click on the word “sound” inside your fitMedia block, and click on the blue button that looks like a briefcase next to the sound you’ve chosen for your first sample. The word sound should change to the name of the sound you’ve chosen.

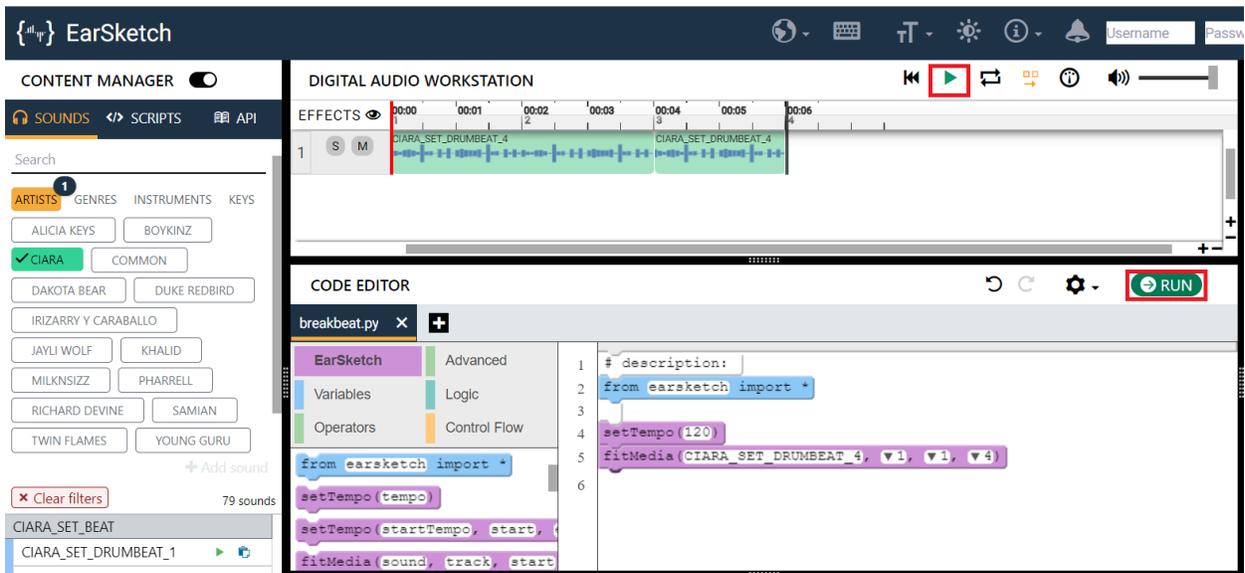


Each sound will be located on a track, in its own part of the Digital Audio workstation section of the screen. This lets EarSketch play more than one sound at a time. The first sample will live on

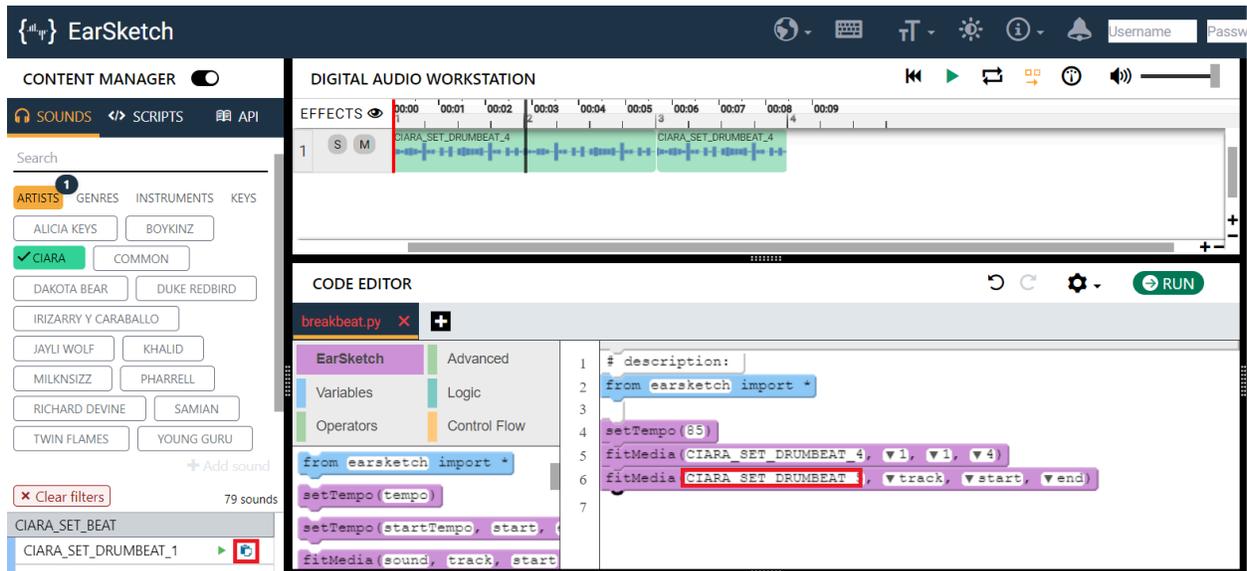
track 1, start on bar one and end before bar four. Make those selections by changing the values for track, start and end on your fitMedia block. Once you've made those changes click run!



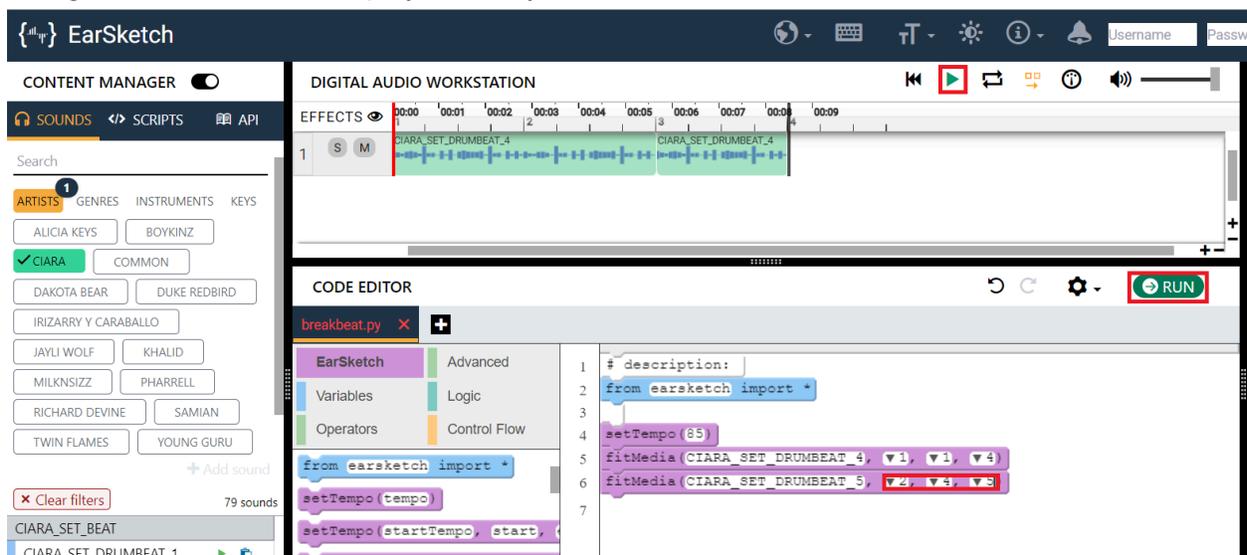
Once you click run, you will see that your sound is on track one, and it lasts for three bars. Click the play button to hear your code. You can adjust the tempo to your liking after hearing your script play. After each code change, you will need to run your code and hit the play button to hear the results.



Now lets use a fitMedia block to tell Earsketch what sample to play on your fourth bar. Drag another fitMedia block out to line 6. Go back to your content manager screen and listen to samples to determine which one you'd like to choose. Once you have chosen your sample, click on the title of the sound in your fit media block, then click on the blue briefcase button next to the sample you've chosen.



This sample will be located on track two, start on bar four and end before bar five. Make those changes, then click run and play to hear your results.



You'll see that the new sample we've chosen is now in track two and fills out our fourth bar. After listening to your code, test it by seeing if there are other samples that may sound better than the two you've chosen. Click on the loop project button to have it play as long as you'd like!

CONTENT MANAGER

SOUNDS <> SCRIPTS API

AKIUS GENRES INSTRUMENTS KEYS

ALICIA KEYS BOYKINZ

✓ CIARA COMMON

DAKOTA BEAR DUKE REDBIRD

IRIZARRY Y CARABALLO

J3ONA1 JAYLI WOLF

KHALID MILKNSIZZ

PHARRELL RICHARD DEVINE

SAMIAN TWIN FLAMES

YOUNG GURU

Show only ★ + Add sound

✗ Clear filters 79 sounds

CIARA_SET_BEAT

CIARA_SET_BASSLINE_1

CIARA_SET_BASSLINE_2

CIARA_SET_BASSLINE_3

CIARA_SET_BASSLINE_4

CIARA_SET_DRUMBEAT_1

CIARA_SET_DRUMBEAT_2

DIGITAL AUDIO WORKSTATION

EFFECTS 00:00 00:01 00:02 00:03 00:04 00:05 00:06 00:07 00:08 00:09 00:10 00:11 00:12

1 S M CIARA_SET_DRUMBEAT_4 CIARA_SET_DRUMBEAT_4

2 S M CIARA_SET_DRUMBEAT_5

CODE EDITOR

breakbeat_1.py ✕

EarSketch Advanced

Variables Logic

Operators Control Flow

```

1 # description:
2 from earsketch import *
3 setTempo(85)
4 fitMedia(CIARA_SET_DRUMBEAT_4, 1, 1, 4)
5 fitMedia(CIARA_SET_DRUMBEAT_5, 2, 4, 5)
6
from earsketch import *
setTempo(tempo)
setTempo(startTempo, start)

```

Running script...

Script ran successfully

SHARE RUN

Use this four bar loop as a foundation and add other sounds, like basslines to what you've already created. Have fun! Once you're ready to share your sounds with other people, click on the share button at the top of your code editor window.

EarSketch

CONTENT MANAGER

SOUNDS </> **SCRIPTS** **API**

AKIStS GENRES INSTRUMENTS KEYS

Alicia Keys BOYKINZ

CIARA COMMON

DAKOTA BEAR DUKE REDBIRD

IRIZARRY Y CARABALLO

J3ONA1 JAYLI WOLF

KHALID MILKNSIZZ

PHARRELL RICHARD DEVINE

SAMIAN TWIN FLAMES

YOUNG GURU

Show only **+ Add sound**

Clear filters 79 sounds

CIARA_SET_BEAT

CIARA_SET_BASSLINE_1

CIARA_SET_BASSLINE_2

CIARA_SET_BASSLINE_3

CIARA_SET_BASSLINE_4

CIARA_SET_DRUMBEAT_1

CIARA_SET_DRUMBEAT_2

DIGITAL AUDIO WORKSTATION

EFFECTS 00:00 00:01 00:02 00:03 00:04 00:05 00:06 00:07 00:08 00:09 00:10 00:11 00:12

1 S M CIARA_SET_DRUMBEAT_4 CIARA_SET_DRUMBEAT_4

2 S M CIARA_SET_DRUMBEAT_5

3 S M CIARA_SET_BASSLINE_4

4 S M CIARA_SET_BASSLINE_4

CODE EDITOR **SHARE** **RUN**

breakbeat_1.py

EarSketch Advanced

Variables Logic

Operators Control Flow

```
1 # description:
2 from earsketch import *
3 setTempo(85)
4 fitMedia(CIARA_SET_DRUMBEAT_4, 1, 1, 4)
5 fitMedia(CIARA_SET_DRUMBEAT_5, 2, 4, 5)
6 fitMedia(CIARA_SET_BASSLINE_4, 3, 1, 2)
7 fitMedia(CIARA_SET_BASSLINE_4, 4, 3, 4)
8 setTempo(tempo)
9 setTempo(startTempo, startTempo)
```

Running script...
Script ran successfully