

Remix #1

Missions 3-5



Have you heard of music remixes?

It is when someone takes parts of a song, or several songs, and combines them with some original music to create something original

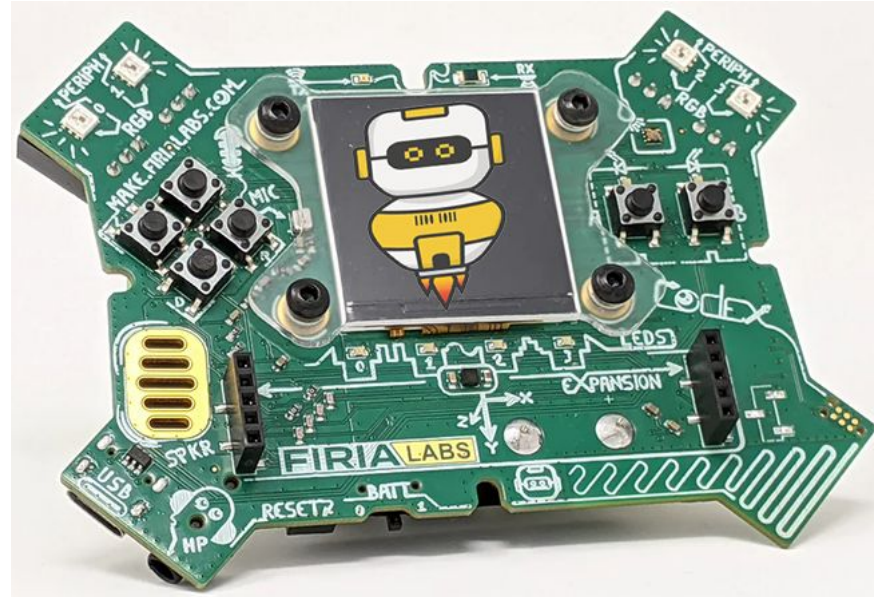
- You can combine two or more songs as part of a remix
- Something new is created by combining parts of songs and adding new music with the parts



Project Remixes

You can do the same thing with your mission projects!

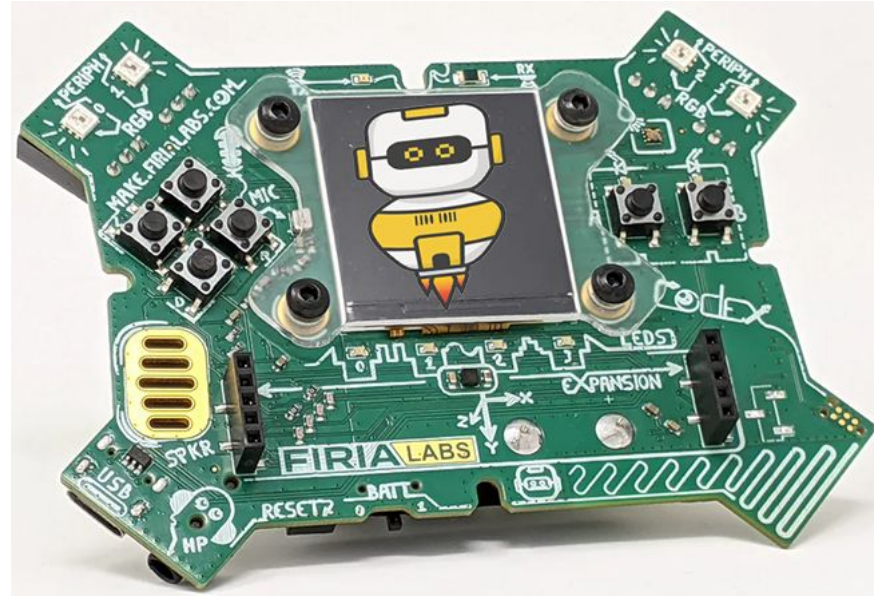
- A new program is created by adding new code and using parts of code from programs you already created
- You can combine parts of two or more programs in a remix



Project Remixes

Creating a remix of your projects will let you:

- Master the skills and concepts practiced in the missions
- Be creative
- Increase your understanding of programming
- Collaborate with your peers
- Design an original program and write the code all on your own



How to get started

Step #1

- Open your projects from the most recent missions
 - Review what the program does
 - Review the programming concepts and skills used

```
Pixels1 x Display x Music1 x
1  '''
2  Mission 5 - Micro Musician
3  '''
4
5  from codex import *
6
7  # Display music pic.
8  display.show(pics.MUSIC)
9  # Play the africa mp3.
10 audio.mp3("sounds/africa")
```



Step #1

Remix #1 Project: Missions 3-5

For this project, you will remix the missions you completed into something new and original. This will generate mastery by having you practice what you are learning. You will do all the thinking yourself – no CodeTrek!

Remix slide deck



Step #1 – Review the missions you have completed

Mission	What the project does	Skills and concepts used
Mission 3		
Mission 4		
Mission 5		

Go to your assignment document and complete Step #1



Mission 4: Display Games ✓

Learn some CodeX display basics and create your first game.

- For example, in Mission 4
 - The final project played a game by asking the user to press buttons in order in under 1 second
 - Concepts and skills:
 - Print text strings
 - Program a pressed button
 - Convert between string and integer



Step #2

Brainstorm ideas

- Look at the extension ideas from each mission
- Come up with your own ideas
- Look suggestions on the next slide

Then select your idea and write a sentence that describes what your remix project will do



Step #2

Mild

Add a voice prompt for the game created in Mission 4. After each `display.print()` the CodeX should audibly prompt the user which button must be pressed.

Example: Your program could do this:

[Day1Remix Mild](#)

Medium

Create turn signals for a bicycle. Press button A to turn left, button B to turn right. The signal (Pixel LED 0 or 3) should be bright RED and blink at least 4 times in the direction of the turn.

Example: Your program could do this:

[Day1Remix Medium](#)



Step #2

Medium Extension

Put your code in an infinite loop so you don't have to run it multiple times.

```
while True:  
    pressed = buttons.was_pressed(BTN_A)  
    ...etc.
```

Example: Your program could do this:

[Day1Remix MediumLoop](#)

Spicy

Pandora's CodeX. A "box of buttons" lies before you. Make each button cause a different action when pressed. For example, button A could play a sound, while button B could light some LEDs. There are 6 buttons, so choose wisely my friends!

Note: For this remix, an infinite loop will be handy. The form in Python is as follows. All the code that runs inside the loop must be indented at the same level starting on the next line after the colon:

```
while True:  
    pressed = buttons.was_pressed(BTN_A)  
    ...etc.
```

Example: Your program could do this:

[Day1Remix Spicy](#)



Brainstorm ideas with your partner. Pick an idea. You do not have to use any of the suggestions – you can come up with your own idea!

Step #2

- You can start small and add to your remix project as you go

Step #2 – Brainstorm ideas for your project. When you have your final idea, write a sentence that describes what it will do:	
My remix project:	
Step #3 – Make a plan (You do not have to complete the entire chart if there is something you will not use or	

Go to your assignment document and complete Step 2 – write a sentence that describes what your remix project will do



Step #3

My remix project:	
Step #3 – Make a plan (You do not have to complete the entire chart if there is something you will not use or code in your project.)	
What variables will we need?	
Add more rows if	

Variable Name	What it will be used for

Go to your assignment document
and fill out your plan


Make a plan

- What variables will you need?
- Which buttons will you write code for, and what will you have each button do?
- What pixels will you light up?
- What images will you display?
- What audio files will you play?
- What text will you display or print?



Step #4

Code your project

- Program the code in the sandbox (located in the lower left-hand corner) 
- Start with a new file and give it a descriptive name (**Remix1**)
- Import your modules
- Define your variables
- Work through the code like you did for the missions, step by step.



Step #4

You can have several programs open at the same time

- Open your programs from Mission 3, 4 and 5
- Use them as a guide while you “remix” parts of their code to make your own project
- You can copy and paste from one program to another if you want to



Step #4

Stop and test frequently!

- Don't try to write all the code at one time
- Mistakes happen, so find them early
- Type just a few lines of code and then run the program
- If there is an error, document it and fix it before continuing



Step #5

Documentation!

- Make sure your code is readable by adding blank lines
- Add comments to sections of your code that explain what they do



Step #5

Get feedback

- Show your code to other students
- What do they think?
- Listen to their feedback and suggestions
- Give yourself some feedback
- Is there something you want to change or improve?
- Anything you want to add?

Modify your code to make your project even better



And now you have your own remix!

Congratulations!

By completing this remix you have:

- learned more about programming
- begun mastering the skills and concepts from the missions
- been thinking! And problem solving and much more!

