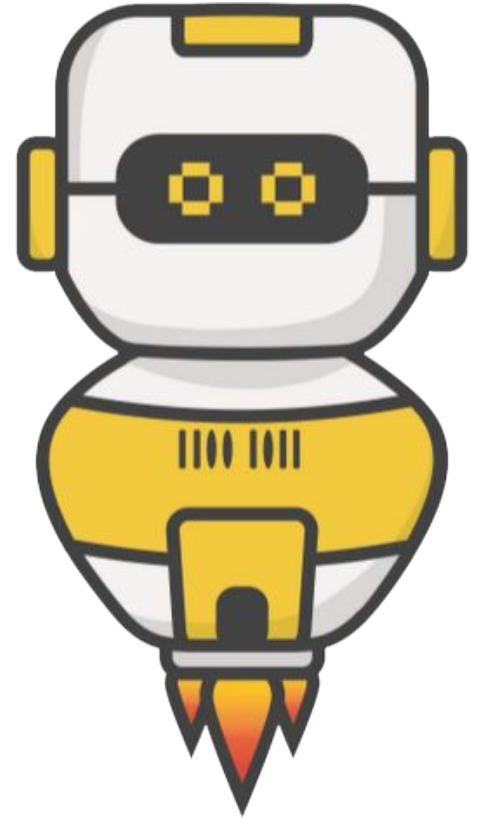# Mission 7 Remix

Create your own project from Mission 7

Warm-up

In your Mission 7 Remix Log, answer the pre-mission preparation questions:

- How would you use a list in math or science?
- What could you use a list for in another subject?

Time for a project remix!

A remix can be:

- A new program created by adding new code to a program you already created
- You can combine parts of two or more programs in a remix
- Use a similar idea in a different way

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Project Remix

Creating a remix will let you:

- Improve your skills and practice the concepts from the mission
- Be creative
- Remember code from earlier programs and missions
- Work with other students
- Design an original program and write the code all on your own
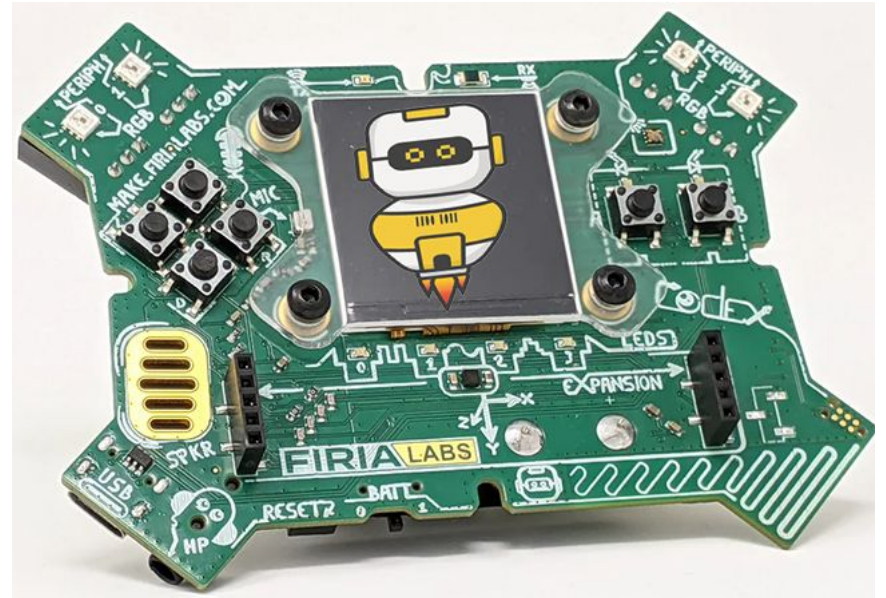
Step #1

Review the mission

- Open your project from Mission 7
  - What does the program do?
  - What skills were used or concepts learned?

DO THIS:

- Fill out the information in the Mission 7 Remix Log for **Step 1**

```python
choice = 0
my_list = [GREEN, "Ahoy", pics.HAPPY,
           pics.SAD, RED, pics.SURPRISED,
           "Having a great day",
           pics.ASLEEP, PINK, pics.TIARA,
           "Meh", pics.TARGET]
LAST_INDEX = len(my_list) - 1

while True:
    my_image = my_list[choice]
    if type(my_image) == tuple:
        display.fill(my_image)
    else:
        display.show(my_image)

    if buttons.was_pressed(BTN_L):
        choice = choice - 1
        if choice < 0:
            choice = LAST_INDEX

    if buttons.was_pressed(BTN_R):
        choice = choice + 1
        if choice > LAST_INDEX:
            choice = 0

    if buttons.was_pressed(BTN_L):
        choice = choice - 1
        if choice < 0:
            choice = 3
```

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Step #2

Brainstorm ideas

- Read through remix suggestions from your teacher

Eight suggestions are on the next 4 slides. You can use any of these ideas or come up with your own.

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Step #2 Remix Ideas

🌶️ Mild-1A

Select a button (other than L or R) and add an if statement that will break out of the loop to stop the program.

🌶️ Mild-1B

Create a list of 6 items (images, text or colors). Assign a value to choice when the button is pressed. Then display the image, text, or color from the list -- no scrolling needed.

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Step #2 Remix Ideas

🌶️ Medium-2A

Create a list of 6 items, like Mild #2. At the beginning, and after each item, clear the screen to black and print "Press a button".

🌶️🌶️ Medium-2B

Add print statements that introduce the program, and add a loop that will "wait" until a button is pressed to begin. Also include a button that will break out of the loop and stop the program. Display an ending message.

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Step #2

🌶️🌶️ Medium-2C

Create two lists: one for images and one for sounds. Using the same "choice" variable, display an image and play a sound. You can use the audio sound files or tones.

   Example:

```
audio.pitch(440, delay)
```


🌶️🌶️ Medium-2D

Create a list of text strings with facts from math, science, history, etc. Scroll through and display the list of facts. You will need to sleep(), clear the display, and print a scroll message.
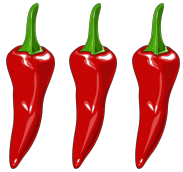
   HINT: use \n in a string to print on a new line

Example:
display.print("Hello \nthere")
will print hello
      there

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Step #2

🌶️🌶️🌶️ **Spicy**

Create 2 lists and use BTN_A and BTN_B to determine which list to display. Then use BTN_L and BTN_R to scroll through the lists. The lists can be anything that interests you, or facts from two different subjects.

🌶️🌶️🌶️ **Extra Spicy**

Add another list with colors. Use the list to light the pixels a different color for each corresponding item in the list.

Optional: light up the red LED light above A or B when the button is pressed.

```
# Example for button LEDs
# Turn on the LED above button A
leds.set(LED_A, True)
```

Video Remix 4A

Step #2

Brainstorm ideas

- Read through remix suggestions from your teacher (previous slides)
- Use the suggestions as presented, or combine some of the options for your own spicy or extra spicy project
- Use your creativity to come up with your own idea for a project
- Decide with your partner what project you will do

DO THIS:

- Fill out the information in the Mission 7 Remix Log for **Step #2**

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Step #3

Make a plan

- What variables will you need? What will you use them for?
- What lists will you use, and what will be their items?
- What buttons will you program, and what will each button do?

DO THIS:

- Fill out the information in the Mission 7 Remix Log for **Step #3**

Step #4

Code your project

- **IMPORTANT:** In CodeSpace, go to the sandbox
- Start with a new file and give it a descriptive name (**Remix7**)
- You can leave any program open, including **Billboard**, and use it as a guide
- Import your modules
- Create your lists and define your variables
- Write your code, testing frequently

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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, fix it before continuing
- Use the debugger and your other programs for help

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? Have them fill out the feedback form on your Mission 7 Remix Log
- Give yourself some feedback Is there something you want to change or improve or add? Fill out the feedback form on your Mission 7 Remix Log

Modify your code to make your project even better

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And now you have your own remix!

Congratulations!

By completing this remix you have:

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

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Mission Reflection

- Wow! Great job!
- Share your project with your friends!
- Run at least three projects from other students
- Complete your Mission 7 Remix Log

- Don't forget to clear your CodeX by running your **Clear** program