

day78 micro:bit left/right
Due: Friday 4/5/24

Here's how today's program is going to work when you are done:

The micro:bit does a 3, 2, 1 countdown and then displays a series of images. If it displays a geometric shape (square, triangle, diamond, etc.) the user presses the a button. If it displays a face (happy, sad, confused, etc.) the user presses button b. At the start the images show for 1000 milliseconds, but as each image appears and disappears, the time drops by 20 milliseconds (so the images keep coming faster and faster). There is a 200 millisecond blank screen pause between each image. The images appear randomly, that is, it is random if the image will be a face or shape, and within the faces and shapes, the one that appears is random. The program keeps track of what it has displayed and also keeps track of which buttons the user has pressed. After 6 images total have been displayed the program reports your "score", that is, the number of shapes (a button presses) vs. the number of faces (b button presses) that you achieved, and tells you if you got it right or wrong. For example: "Correct! 3 faces, 3 shapes" or "Wrong! There were 2 shapes and 4 faces, but you found 3 shapes and 3 faces."

The program pauses for five seconds when done, then starts over again.

Notes:

1. Make a list variable to hold five shape images. Use built-in images.
2. Make a list variable to hold five faces. Use built-in images.
3. Do a while True loop.
4. Create four variables: shapeCount, faceCount, aButtonCount, and bButtonCount. Set them all to zero.
5. Make a variable "delay" and start it at 1000.
6. Do a 3, 2, 1 countdown, then start displaying images in a new while True loop.
7. Do a random number from 1 to 2. If it is 1, display a random shape and add 1 to the shapeCount variable, if it is 2, display a random face and add 1 to the faceCount variable. To display a random item in a list use random.choice(listName).
8. Sleep for the delay value.
9. Check if a was pressed, or b was pressed. Add 1 to the correct button counter variable.
10. Make the delay value 20 smaller.
11. Add a sleep(200) line.
12. If faceCount + shapeCount == 6 break.
13. After the break, check if aButtonCount == shapeCount and bButtonCount == faceCount. If both are true, report "you win!" and the results. If they are not equal, report the actual results and the desired results.
14. The whole thing repeats automatically forever after a five second break.