

day74 micro:bit reaction time

Tuesday 3/7/23 (6th period) Wednesday 3/8/23 (7th period)

Today you will code a reaction time game. Your task:

1. Write a program called day74 reaction.py. Make sure your name is in a comment at the top.
2. Your program does a countdown, 3, 2, 1, then goes blank, waits between 3 to 8 seconds (a random amount), then displays something (your choice). The user then has to press button A as quickly as possible. You record how long it took (between the display of the image and the press of the button) and report that time in milliseconds.
3. Keep track of the best score, that is, the lowest reaction time and report if the user gets a new record.
4. When you get all of the above running, add code to not allow the user to cheat by just holding down the button before the image appears. If they do this, say "no cheating", then start over.

You need the microbit import line. You will also need to import random.

To make the code sleep a random amount of time you can do this:

```
val = random.randint(3000,8000)
sleep(val)
```

To time how long between the image appearing and the button being pressed you use the `running_time()` function like this:

```
 #(here you make the code wait the random amount of time, then display an image

if button_a.was_pressed():
    display.scroll("no cheating!")
    continue

before = running_time()

while not button_a.was_pressed():
    continue

after=running_time()
duration = after-before
```

In the above code the variable `duration` holds the elapsed time in milliseconds when it gets to that point.

Good luck, and remember, doing part of this is much better than doing none of it. For example, get the whole thing working without keeping track of the best score first, then if you can, implement that part without breaking everything else.

Test your program. If you make a decent effort, you should always be able to break the record (I started the record out at 10000 so that any decent effort would break it.) Do another round. If you do a longer time, does it say "new record" again when it should not? If you do a shorter time, does it give you the new record?

Ask a classmate to test your program. Fix any problems they find.

Then call me over to check you off. Turn your program in on the Google Classroom when you are done.