

Programming Basics

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* Indicates required question

A while loop serves what purpose? *

1 point

```
from botcore import *
from time import sleep

# Define variables for blink delay and LED number.
delay = 0.5
n_led = 0

while True:
    leds.user_num(n_led, True)
    sleep(delay)
    leds.user_num(n_led, False)
    sleep(delay)
```

- Repeats the block of code indented beneath it as long as the given condition is True.
- Runs only the block of code indented beneath it if the condition is True. Otherwise, run the other block of code.
- Breaks out of the loop.

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Would this code turn the LED on? Why or why not? *

1 point

```
from botcore import leds
while False:
    leds.user_num(0, True)
```

Your answer

What would be a descriptive comment for this code? *

1 point

```
n_led = n_led + 1
```

Your answer


Explain the difference between `n = 0` and `n == 0`. *

2 points

Your answer

What is the purpose of the code below? *

2 points

 `if n_led == 8:
 n_led = 0`

Your answer

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What statement exits the nearest enclosing loop? *

1 point

Your answer

How times with the LED flash when the code below runs? *

1 point

```
from botcore import leds
from time import sleep

delay = 0.1

i = 0
while i < 5:
    leds.user_num(0, True)
    sleep(delay)
    leds.user_num(0, False)
    sleep(delay)

    i = i + 1
```

Your answer

What is the difference between `button.was_pressed` and `button.is_pressed`?

* 2 points

Your answer

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A named chunk of code that you can call any time is called a ____? *

1 point

```
def flashSmile():  
    display.show(Image.HAPPY)  
    sleep(500)  
    display.clear()  
    sleep(500)
```

Your answer

How are the buttons interacting with the variable? *

2 points

```
# Import everything (*) from the pre-written micro:bit code package  
from microbit import *  
  
# Declare a variable, and store an initial value in it  
delay = 1000  
  
# Keep displaying and checking buttons forever (infinite loop)  
while True:  
    # Display HEART and wait...  
    display.show(Image.HEART)  
    sleep(delay)  
  
    # Display HEART_SMALL and wait...  
    display.show(Image.HEART_SMALL)  
    sleep(delay)  
  
    # If button A pressed, go slower  
    if button_a.was_pressed():  
        delay = delay + 200  
  
    # If button B pressed, go faster  
    if button_b.was_pressed():  
        delay = delay - 200
```

Your answer



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What is the difference between "button_a.is_pressed OR button_b.is_pressed" and "button_a.is_pressed AND button_b.is_pressed"?

* 2 points

```
while True:
    if button_a.is_pressed() or button_b.is_pressed():
        # ...
```

Your answer

Why would you want to include a print statement in your code, such as the * 1 point one below?

```
from botcore import leds

while True:
    val = ls.read(0)

    print(val)
```

Your answer

To turn on LEDs using a binary number, you use `leds.ls(0b10001)`. What code would pass a list of Booleans to the LEDs to accomplish the same goal?

2 points

Your answer

Recall that the `prox.detect()` function returns boolean values. What would the print statement be if your 'bot was at the edge of your desk, pointed into open space? 1 point

```
from botcore import *
from time import sleep

val = prox.detect()

while True:
    print(val)
    sleep(0.5)
```

Your answer

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