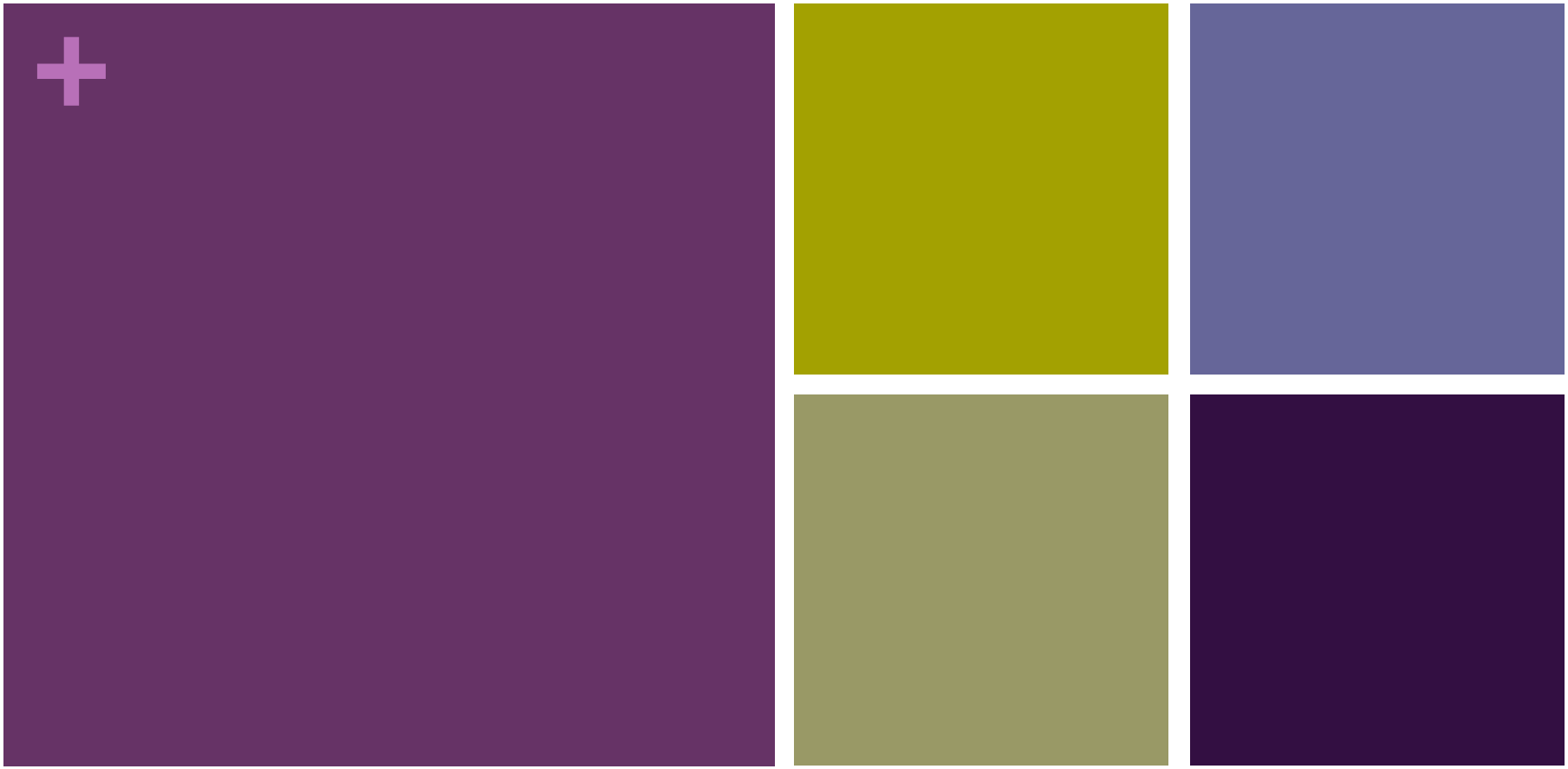
Warm Up

www.pollev.com/python002



Decision Structures & Boolean Logic

CSCI-UA.002-006

+

IF-ELIF-ELSE Structure

Nested Decision Structures

```
g = float(input('grade '))

if (g > 90):
    print ('A')
else:
    if (g > 80):
        print ('B')
    else:
        if (g > 70):
            print ('C')
        else:
            if (g > 60):
                print ('D')
            else:
                print ('F')
```

IF-ELIF-ELSE

```
g = float(input('grade '))

if g > 90:
    print ('A')
elif g > 80:
    print ('B')
elif g > 70:
    print ('C')
elif g > 60:
    print ('D')
else:
    print ('F')
```

Why is there so many different ways to do the same thing?

```
######### Method 1 ################
choice = 3

if choice == 1:
    print("A")
elif choice == 2:
    print("B")
else:
    print("C")
```

```
######### Method 2 ################
choice = 3

if choice == 1:
    print("A")
if choice == 2:
    print("B")
if choice == 3:
    print("C")
```

```
######### Method 3 ################
choice = 3

if choice <= 2:
    if choice == 1:
        print("A")
    else:
        print("B")
else:
    print("C")
```

Important to remember

- IF statements are **independent** questions. That always get asked!
- ELIF and ELSE are **dependent** questions that only evaluate when the previous IF or ELIF are False.

How many possible outcomes are there?

```
########## Method 1 ###################
num = 3

if num >= 2:
    print("A")
elif num == 3:
    print("B")
else:
    print("C")
```

How many possible outcomes are there?

```
########## Method 2 ###################
choice = 3

if choice >= 2:
    print("A")
if num == 3:
    print("B")
if num/2 > 1:
    print("C")
```

How many possible outcomes are there?

```
########## Method 3 ####################
num = 3

if num >= 2:
    if num == 3:
        print("A")
    else:
        print("B")
else:
    print("C")
```

Generating Random Numbers

Generating a random integer

- Sometimes you need your program to generate information that isn't available when you write your program
- One way to solve this problem is to ask your programming language to select a "random number" – from there you can use this number to construct a somewhat random set of running conditions
- You can generate a random number by using the randint() function. This function takes two parameters (a starting integer and an ending integer) and returns one value (a random integer in this range)
- In order to use the randint() function you must first "import" the "random" module so that Python can access the necessary code library.

Random Integer Example

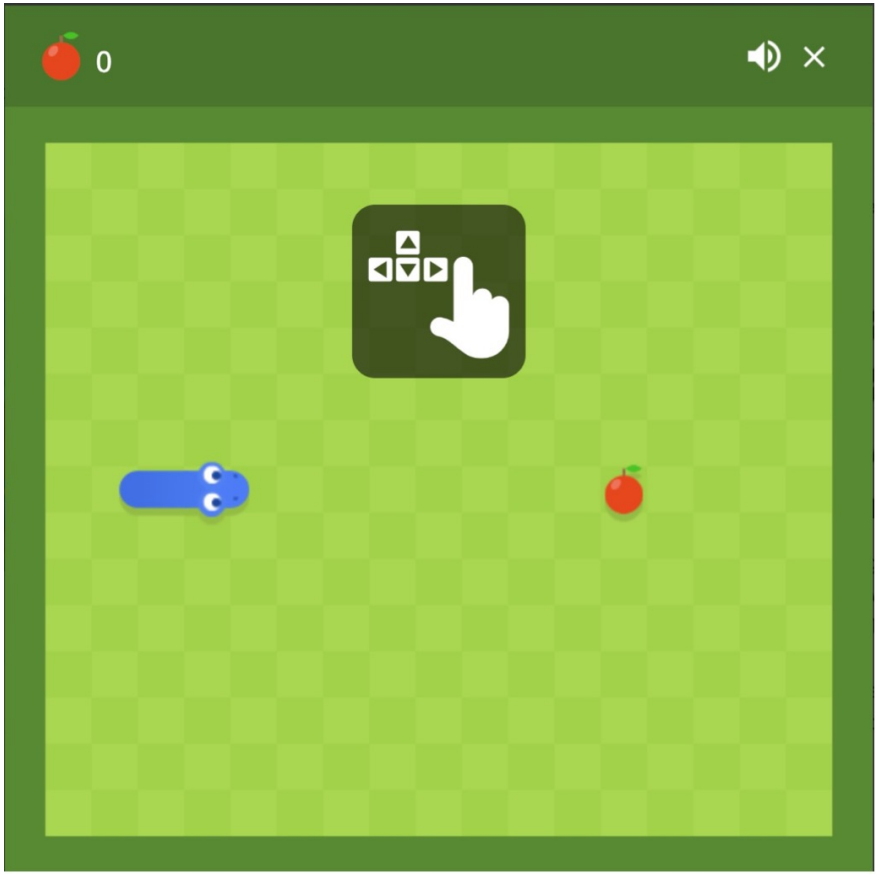
```
# ask Python to import the random module
import random

# generate a random number
num = random.randint(1,5)

print ("your lucky number is", num)
```

Random Numbers in the Wild

Game Development



Random Numbers in the Wild

NFTs and Generative Art

Practice Worksheet

Assignment #2