NVCA CODING CLUB

ABOUT THE INSTRUCTOR

WHAT ARE WE LEARNING?

- Python Programming (Coding)
- Data Structures and Algorithms
- Digital Hardware / Electronics

PYTHON - STRINGS

- Strings are “strings of characters” – they are how you create text in python
- To create a string, you surround it with either single or double quotes
  - ‘Hello, NVCA’ or “Hello, NVCA” are both correct
- In python, these are the `str` type

PYTHON - NUMBERS

- There are two key numeric types – integers and floating point
- Integers are whole numbers that can be positive or negative
  - e.g., -1, 0, 1, 8675309
  - In python, these are the `int` type
- Floating point numbers are how you represent decimal numbers.
  - e.g., 1.337
  - In python, these are the `float` type

PYTHON - BOOLEANS

- Booleans can only ever be `True` or `False`
- They are used for making logic decisions
- In python, these are the `bool` type

VARIABLES

- Variables are how you store things so you can use them again later
- You create a variable by assigning a value to it
  - `hello_world = "Hello NVCA"`
  - `num_students = 16`
  - `jesus_loves_me = True`
  - `gpa_for_an_a = 4.0`

LOGIC – IF/ ELIF / ELSE

- You can control the actions your program takes by using an `if` statement

```
num_registered_students = 16
if num_students == num_registered_students:
    print(“All students are in attendance”)
else:
     print(“Some students are not present”)
```

REPEATING ACTIONS - LOOPS

- Loops let you repeat actions
- There are two kinds of loops – `while` and `for` loops

WHILE LOOPS

- While loops execute until a boolean condition is no longer true

```
student_count = 0

num_students = 16

while student_count < num_students:

    student_count += 1

print(student_count)
```

FOR LOOPS

- For loops allow you to iterate over a set
  - The set can be either a range if numbers – i.e., `range(32)`
  - The set can also be a set of objects in a list or dictionary

```
for i in range(10):
    print(i)
```

EXERCISES!