Unit 1 - Programming with Python - Study Guide

What is code?

- What is **code**?
- What is **abstraction**?
- Why do we have programming languages?

Uses of Programs

- What is an **algorithm**?
- What is a **program**?

Hello World

- What function is used to display information on the screen so that the user can see it?
- What does the word **interactive** mean?
  - Why is it important for programs to be interactive?

Variables and String Operators

- What are the 3 most common data types in Python?
- What is a variable?
- How can a variable be created in a Python program?
- What are the rules for naming variables in Python?
- Know the definitions of:
  - Define
  - Initialize
  - Assign
- How can the type of a value be determined?
- What are the 2 string operators that can be used in Python?
  - What do those operators do?

User Input

- What is the difference between the **user** and the **programmer**?
- Which function is used to retrieve information from the user?
- How can a value be transformed into a different type?
  - How can this be used to prompt the user for integer typed input?

Basic Math in Python

- What are the **eight** mathematical operators that are available in Python?

- What does the **modulus** operator do?
- What order does Python use to evaluate mathematical expressions?

Using Graphics in Python

- How does the coordinate system of the canvas work?
- How is a **Text** type variable created?
  - What is its reference point?
- How is a **Circle** type variable created?
  - What is its reference point?
- How is a **Rectangle** type variable created?
  - What is its reference point?
- If given the width and height of the canvas, what is the coordinate for the center?

Mouse Events: Mouse Clicked

- What is a **callback function**?
- Which function do we use to **bind** our *callback function* to a mouse click?

Key Events

- Which function do we use to **bind** our *callback function* to a key press?
- What value do we use to discover which key the user pressed?