Introduction to Computer Programming p2: Python

# Course Objectives

The goal of this course is to learn about computer science through python programs. Python is a written programming language used by several companies and college courses! We will reiterate concepts covered in SNAP! like data types, lists, user defined functions, and loops as well as introduce new concepts that are distinct to Python. By the end of this course you should be able to create a functioning python program and be ready to study more computer science!

# Course Structure

Like last semester the course will be focused on labs/projects. Each unit will be made up of several lessons. Most of these lessons have a lab associated. The final section of a unit is a project which will cover topics learned in that unit.

As with the first semester—all work is ideally completed during class time. If this is not possible, please contact the instructor about setting up a time to come in after school or a home work environment.

## Work Space

We will be making use of the following website to write, edit, run & turn in code [RECCOMMENDED IDE HERE]. [TURN IN POLICY HERE]

## Collaboration Policy

Discussing specific labs/problems with a neighbor can be a helpful way to understand concepts, but, as with other courses, copying your neighbor’s assignments is against the honor code. In programming it is common to use the language’s documentation website for basic syntax questions. Feel free to read the documentation if it helps you! It is also common in programming to use websites for debugging questions (common website is called *Stack Overflow*). While copying code from these debugging websites is against the honor policy using them as a resource for understanding is very common practice. Just be warned Stack Overflow is a question/answer website so the syntax, style and correctness depends on who answers the question posted. ☺

## Grade Breakdown

Each unit has a mixture of labs, quizzes and projects. Final Grades will be awarded based on the following percentage:

Participation: 15%

Labs: 45%

Projects: 25%

Quizes: 15%

# Curriculum Outline

1. Intro to Python
   1. This unit covers the introduction to Python, the website we will be using to write, save, and turn in our work, as well as inputting and outputting data.
   2. Key Topics: Interpreter, Input, Output, Variables
   3. Assessment: Quiz
   4. Further Depth: Mad Libs
2. Data Types & Expressions
   1. Project: Adventure Quest
3. Functions
   1. Project: Oregon Trail
4. Loops
   1. Project: Tic-Tac-Toe & Checker
5. EarSketch
   1. Project: Make a complex Song
6. Dictionaries
   1. Project: Guess Who
7. Classes/OOP
   1. Project: Pokemon