Second Semester of Coding Class

5/25/2023

Timeline Presentations and Grooming

Project Summaries and Blockers

- Karen - A karaoke app that parses songs for lyrics and displays them
- Ryan - A D&D dungeon and encounter randomizer
- Nick - A small game in Godot
- Brian - A small video game

Congrats! You have all learned the basics!

In my opinion you have all taken the steps (at one point or another) to learn some of the basics to Python. While this does not encompass the entirety of what you would learn in an intro CS201 course at a collegiate level, it does cover around the first half of a semester. This, for us, should be a good point to bookmark, and start the next set. As we are only meeting once a week, at best, and are moving at a much slower rate.

What We Covered

- Python Objects
- Python Comparison Operators
- Python IF statements
- Python Loops
- Python Functions
- Python Lists and Dictionaries
- Python Libraries
- Basic Python Object Oriented Programming
- Github
- Long Term Projects
- What else?

What's Next

- Github Revisited
- In depth Python Functions
- In depth Object Oriented Programming with Python
- In depth Python Packages and Modules
- Lambdas in Python
- Python Decorators and Generators
- APIs and web scraping in Python
- C# introduction and setup
- C# data types, variables, functions and methods
- C# methods

Why are we continuing in Python now, only to transition to C# soon? And why C#?

- Continuing in Python for the moment is the best way to continue building on the foundations which you have all built
- It allows us to take a minor look into the world of OOP (Object Oriented Programming) without a pivot to C at the moment.
- Python will be useful, in the long run, for databases with your long term applications as well as other API calls and information needs.
- C# will be a good transition into OOP on a larger scale. It handles GUIs MUCH better than Python and will prepare you well for other languages in how it handles compiling and OOP in general.
- Python was a great starting foundation for us and we want to reinforce this because it won't overwhelm you, but we want to transition to a language with more power, but still not overwhelming, this is C# (yes Java or C++ are both great, and better in some cases, as well as Ruby w/ Rails, however C# has some safeguards in place to prevent memory errors that can really break things). In short, Python to continue, but C# is the best next step.

Syllabus for Next 6 Classes

- Week 1 - Python Functions and Methods
  a. 3 hours of Udemy, Complete Python Bootcamp Zero to Hero Section 6
  b. https://pythonlobby.com/python-function-exercises-with-solution/
  c. HW
- Week 2 - OOP with Python
  a. 1 Hour of Udemy, Complete Python Bootcamp Zero to Hero Section 8
  b. https://pynative.com/python-object-oriented-programming-oop-exercise/
  c. HW
- Week 3 - Python Packages, Modules, Decorators and Generators
  a. 3 & 1/2 Hours of Udemy, Complete Python Bootcamp Zero to Hero Sections 9, 10, 12,13,14
  b. https://www.w3resource.com/python-exercises/python-functions-exercise-17.php
  c. HW
- Week 4 & 5 - Python Lambdas, APIs, Web Scraping
  a. 3 Hours of Udemy, Complete Python Bootcamp Zero to Hero Sections 15,16,17,18
  b. https://www.dataquest.io/blog/python-api-tutorial/
  c. https://realpython.com/python-lambda/

Syllabus Cont.

- Week 6 - Intro to C#
  - 3 Hours of Udemy, Complete C# Masterclass Sections 1, 2
  - https://www.w3resource.com/csharp-exercises/data-types/index.php
  - HW
- Week 7 - C# Functions and Methods
  - 2 & 1/2 Hours of Udemy, Complete C# Masterclass Sections 3,4
  - https://www.w3resource.com/csharp-exercises/function/index.php
  - https://csharp-book.softuni.org/Content/Chapter-10-methods/exercises-methods/exercises-methods.html
- Week 8 - C# Loops
  - 1 Hour of Udemy, Complete C# Masterclass Section 5
  - https://www.w3resource.com/csharp-exercises/for-loop/index.php
  - HW

Github Review

Resumes

For Next Class

- Complete Section 6 of The Complete Python Bootcamp From Zero to Hero in Python
  - This is a lengthy section and is about 3 hours, but it's crucial to complete, so do this BEFORE any other HW assignments. Take it in chunks if needed, my recommendation is to do 1 hour a day.
- Complete the assigned reading and worksheet found here.
- Complete the following functions:
  - A function that returns the lesser of two given numbers if both numbers are even, but returns the greater if one or both numbers are odd.
  - A function that takes a two-word string and returns True if both words begin with same letter.
  - A function that given two integers, returns True if the sum of the integers is 20 or if one of the integers is 20. If not, returns False.
  - A function that capitalizes the first and fourth letters of a name.
  - A function that returns a sentence with the words reversed.
  - A function that given an integer n, returns True if n is within 10 of either 100 or 200.
  - A function that given a string, returns a string where: for every character in the original there are three characters.
- Project Work Tech Specs