BEST Coding Workshop

Summer 2020

Mondays, Wednesdays from 4:30 - 5:30 PM EST
Zoom: https://tufts.zoom.us/j/91006005039
Github:
https://github.com/jessllrr/BEST-summer-coding

Instructor

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BEST 2022
Pronouns: She, Her, Hers
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Goals and Objectives:

- To foster students' confidence in approaching Tufts course material, such as the content in ES2 (Intro to Computing in Engineering), COMP11 (Intro to Computer Science), ES3 (Intro to Electrical Systems)...
- To explore the intersection of software and hardware components using Python and Micro:bit.
- To introduce helpful academic resources and commonly used assistive platforms.
- To learn the fundamentals of coding across all programming languages.
- To build collaboration skills through group projects.

Participation:
This is a space for you to explore coding in a structured environment. The expectation is that you attend all Zoom sessions. If you have a scheduling conflict, please reach out to Campbell or myself. Any out of class assignments should be completed by Friday at midnight (apart from Week 1's assignment).

Technology Use:
For this workshop, along with learning python, we will be using software and hardware supplements to support our learning. Below is a list of everything we will be using!

Software:

- Google Colaboratory
  "Colab" is a platform which allows anybody to write and execute arbitrary Python code through a browser. While Colab works on most major browsers, it has been thoroughly tested on Chrome, Firefox, and Safari.
- Github
  Github is a code sharing and publishing service. It serves as a place for developers to store and document different versions of their projects. Think of it as a filing system for every draft of a document; or in this case, every version of a coding project.

Hardware:

- Micro:bit
- Breadboard
- Jumper Wires
- Alligator Clips
- Breadboard Speaker
- LEDs/Resistors

Weekly Schedule
*assignments can be found at Github: https://github.com/jessllrr/BEST-summer-coding

Date:	Topic of the Day:	Assignment, Due Date:
Wed., July 1	*Variables and variable assignments; Data types and operators*	WEEK 1: Intro to Python, Due Monday, July 6
Mon., July 6	*Review of last week; flow of execution; loops and iterations*	WEEK 2: Functions, Due Friday, July 10
Wed., July 8	*If-statements and functions; debugging*	-
Mon., July 13	*Lists, input/output, and files*	WEEK 3: Practice Problems, Due Friday, July 17
Wed., July 15	*Intro to micro:bit*	-
Mon., July 20	*Building with the micro:bit*	-
Wed., July 22	*Applications of programming: Physics Simulator!*	-
Mon., July 27	*TBA*	-
Wed., July 29	*TBA*	-
Mon., August 3	*Connecting coding principles to other languages: C++*	

Additional Resources:
A big part of learning how to code is learning how to look stuff up! You'd be surprised how often we use Google to solve our problems. Here is a list of some websites that have really helped me in the past:

- https://www.geeksforgeeks.org/python-programming-language/ - My personal favorite guide
- https://www.w3schools.com/python/ - Another useful guide
- https://docs.python.org/3/ - Ultimate python resource, official python documentation
- http://greenteapress.com/thinkpython/thinkpython.pdf - a handy intro to python textbook