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**ITP-116**

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**Professor: M. Majedi Ph.D**

**Final Project Deliverable**

***What Is included?***

I chose to build a project that a professor could use as a teaching/learning resources for students to study graphs theory. This includes 6 learning modules, and 4 projects to complete as well has little challenges to be drawn by hand. In this file you will find 2 nearly identical folders that are titled Student and completed respectively. As one would assume, in the student folder is just the raw learning material, bare bones or somewhat scaffolded .py files to work in, and detailed instructions for how to follow along with the process if this is ever assigned. The competed folder is all of the same stuff, however all of the code has been completed, tested, runs, and can be used by TA’s and graders as needed to help other students as well as gain me the credit for actually completing this project. The structure of both files will be nearly identical, the only difference being the inclusion of framework or completed code in the python files.

***What does the process look like for students?***

I chose to keep the instructions inside as simple as possible since it is packing a 4 projects into one. So in the root directory there is the first README PDF. Students should first open this and read the instructions explaining they are to follow each of the provided links to the learning module PDFs and follow them in the order provided, then they are to complete the projects. Each project is listed below and has a link to each respective projects PDF instructions. From here the students will read the requirements and proceed to write their code for submission.

***What does the file structure look like?***

The structure is as follows. Within each folder you will find a README file in both markdown and PDF, as well as 2 sub-directories, objectives and projects. Students will first open the read me which has links to all other PDF files that will be needed, and go through the learning objectives. All of the learning objective .md and and .pdf files can be located in their own respective subdirectories under objectives. Once a student has completed these modules, they can proceed to working on the code. Each of the 4 projects increases in difficulty of completion, has the file structure prepared, has some test cases prepared, in some nfrastructure code, and detailed instructions for completion and additional challenges if a student is inclined to try to complete them. Each project is stored in its own respective sub-directory. In each subdirectory you will find more README files, this is where you will find the instructions, expected outputs, and so on.

***How do I run the code?***

If you are an administrator however your interests will be in actually running the code. To do this, simply open the completed folder, open the projects folder, and run the designated file from the list below(Though in most cases the code file is the only python file present and is clear)

***Project file locations:***

1. **Project One: Graph Traversal**

**completed > projects > graph > graph.py or test\_graph.py (Unit tests for admins)**

1. **Project Two: Earliest Anscestor**

**completed > projects > ancestor > ancestor.py or test\_ancestor.py**

1. **Project Three: Earliest Anscestor**

**completed > projects > social > social.py**

1. **Project Four:Adventure Game**

**completed > projects > adventure > adv.py**

Simply run the listed python file for each project you would like to test. If you would like to learn more about each of the projects, what they ask of students, expected outputs, and so on this can be found in the README files in each projects root directory.