CS 021 - Final Project

This project is due on Friday, December 10th (the last day of classes) at noon. After your second exam the remainder of the semester will be dedicated to working on this project.

NOTE: there is extra credit available for submitting a proposal by end of day on Friday, November 19th (details below).

Description:

READ THE ENTIRE DOCUMENT – This is a self-designed final project, thus is an opportunity for you to create a program that utilizes and builds upon the material you've been exposed to in CS021. You are free to choose your own final project theme and design.

Some ideas include:

- An engineering or scientific application
- Board or card game *(with or without sound and/or pictures. No text-adventure or hangman)*
- Web application *(e.g. utilizing Python Flask, Djanjo, etc.)*
- Related to a hobby *(skiing, photography, etc.)*
- Set of activities for children *(e.g., to learn physical science concepts, foreign language vocabulary, etc.)*
- A data management system *(e.g., keeping track of any kind of inventory stored in a file, fitness or nutrition tracker)*
- Business application *(estimating jobs for a construction site, creating billing or payroll)*
- Data analytics *(working with a dataset to extract meaningful information, graphing trends, etc.)*
- …or whatever else you can dream up!

Please review the following requirements:

- Must be coded in Python 3
- Group size of 1-3 students
- Project complexity and effort must be proportional to group size as follows:
    a. Group of 1: Effort = 2X assignment
    b. Group of 2: Effort = 3X assignment
    c. Group of 3: Effort = 4X assignment
- For groups, include in the comments who coded what *(function headers are a good place for this)*
- Partners can be from another section, but has to be same professor
- No external code permitted *(i.e. no copying code from the Internet or another source, etc. However, you may use existing libraries/modules/packages/API's).*
- Any/all resources referenced in the development of your project MUST be properly cited *(including textbooks, web tutorials, Stack Overflow, etc.).*
- Professors and Teaching Assistants are available for consultation on program design only; no debugging of code *(this is an opportunity for you to demonstrate what you've learned in the course).*
- Appropriate for an academic environment

Evaluation:

The following rubric will be used in the assessment of your final project:

- 45% - Complexity & Functionality *(effort appropriate, does it work?)*
- 25% - Programming Style *(code using functions, appropriate documentation, etc.)*
- 15% - Error/Exception Handling *(can I break your program at run time?)*
- 10% - Originality & Implementation *(is it a unique idea, does it impress?)*
- 5% - Submitted Materials *(includes testing instructions, citations, etc.)*
- 5% *Extra credit*: submit a proposal by end of day Friday, November 19th. This proposal should include the theme of the project and approximately one-page describing what you hope to accomplish, in terms of functionality (i.e., what your project will actually do), user interaction, data requirements (input and output), tables, graphs, other files you plan to create, etc.
    - If you are working in a group, one person should submit the proposal with all team members' names.

Submission:

The following materials must be submitted to Blackboard [Final Project dropbox] **NO LATER THAN NOON (11:59 AM) Friday, December 10th**. No credit awarded after that time.

1. **Project Summary Document** [1-page] consisting of:
    - Summary of program *(what does it do, why did you build it?)*
    - Testing instructions *(detailed steps to run your project, including what and how to install any dependencies necessary to run your project. E.g.: pip3 install flask)*
    - Citations *(any resources referenced, APA format)*
2. **Project files**, including:
    - All files needed to run and test your program
    - For groups, include in the comments who coded what (function headers are a good place for this)
    - For groups, only ONE student in the group needs to submit. Be sure you have included all group members' names in your writeup.

Note: If your project is particularly complex to setup, please schedule a time to demo your project with your instructor prior to the due date.

Any work you submit for this assignment should be authored entirely by yourself or members of your group. Assistance is permitted from the instructor, teaching assistants, or group members only. All submitted programming assignments are subject to originality verification through software designed and used for the Measure Of Software Similarity (MOSS).
