Final Project

CSC 236

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Website: <http://cs.berea.edu/courses/csc236/tasks/fp.final-project.html>

1. **Author/Authors:** John Hellrung
2. **Motivation**: In a paragraph, explain your motivation for choosing this particular project and what code you are expanding from.
   * I always wanted to make a game out of C++ and now that I have the knowledge to do so. I want to expand my gear shift game. I believe this will give me a decent challenge to test my C++ skills. Plus, this poprotuney will give me the another piece of software to add to my gaming portfolio. I could use this as a way of expanding my horizon with C++ language which will ultimately help improve my coding skills. This is why I believe this is a great idea for my project.
3. **Purpose**: Provide a short, but formally written, description of the software you have created and its purpose.
   * The purpose is to make a game and the user can enjoy. The game will have you playing a texted based game with you pushing down on pedal to make the automate car finish the race with as many point as you can win.
4. **Audience**: Describe the intended audience of users and the main usability goals (i.e. how the expected users will benefit from your project)
   * The Audience will be Gamer user like small flash game and love to code. The user should expect to be entertain and find a the game to have beginning and end. It is what I want my game to be.
5. **Instructions:** Explain how to use your program and/or play your game.
   * The user will be ask to enter their name and when will enter an input of GAS and brake. Then, they be prompted by the speed and distance left. The user will keep being ask to enter a input for GAS and brake and will be prompt until they win the game. As they win the game the game stores their name and score into a list. There is print after each game. Then the user is prompted to play the game again.
6. **Design**: Using CRC cards, pseudocode, or a mixture, create a design plan which meets the computational requirements.
   * I will use the GearShift assignment and add pedal to car alone with a way of tracking speed and miles.
   * GearShift class will made the Gear Shift up and down
   * Pedals class will checks the pedal and call the Gears shifts
   * Road class will create the road the record the distance
   * PlayerScore will record the speed and check to see if the user has won
7. **Functionality**: A list of the project's primary functionality and characteristics.

Python

Recursive

User-Driven

Uses Classes

Uses dictionaries

1. **Files**: A list in bulleted form of the names of all files submitted (source code and input, etc.)
   * Main.py
   * GearShift.py
   * Pedals.py
2. **Utilized Data Structures:** This project must effectively use one or more data structures studied in this course. In this section state which data structure(s) you have used, discuss why you believe these were appropriate choices, what alternate structures you might have used in its place, and why you made the choices you did.

I will be utilizing list and dictionaries. I used lists in the main functions to keep track of the user score. I used a dictionary in GearShift.py as a store the information for speeds I need to compare to the gears. I also used dictionaries in Pedals.py as a way of storing information need for compairing the user’s input to the pedal values.

1. **Big O Analysis:** Choose a section of code which makes important use of a data structure explored in this course. Clearly mark this section of code so that it can be referenced here. Compute and explain Big O analysis on that section of code.

The big O when I am using dictionary is O(1) because it just compare the value with a key and no searching involved. Now, when I use the list in my code I do not search through it. I just append to it and print it out to the screen.

1. **Resources**: Using a formal standard for documentation, list all software resources utilized in the making of your project (platform,language, libraries, tools, etc.,) and describe and how you integrated the ideas or code into your program.

I started using Code Blocks then when to Cloud 9 because I find it easier to use and gives me less errors. Then, I switch to python and I still used Cloud 9 but at the very end I switch to Pyscripter. In Pyscripter, I used the libraries random and time. I used Google as a debugging tool along with all three debugged used in the three EDI I used in the process of this project.

1. **Challenges**: The challenges that you encountered during this project’s development.

At first the Challenge was coding in C++ and how to plan out how big I wanted my project with the limited knowledge I know. As I said I started in C++. Now, the reason is because I got angry trying to write and debugging with the limited knowledge. On Friday Dec. 5. I made a decision because I was going nowhere with C++ and I knew that I could convert C++ to python very well. I did this in about 30 mins and move on to the next thing. I hate using code block which also another reason why I switch to python. My Second big issue was I spend too many hours rewriting and going back to the drawing board because of trying to learn C++ and learn new things for Python that caused me to revised everything in my code. I believe this stem from always work with a partner because my partner and I would always throw around ideas. This cause me to me better decision thus spending less time debugging and go back to the drawing board.

**Testing**: A list in bulleted form of all input values or unit tests used for testing. Here you should be careful to select representative input cases, including both representative typical cases as well as extreme cases.

Input Values:

* GAS (This is input for the Gas Pedal )
* Brake (The is input for the Brake Pedal)
* Playing (This is Y or N values that asks the user if she or he want to play.)
* Typical cases are that you type the right GAS and Brake which are F,H,N for GAS and B,S,N for Brake. If you type these into the input you just be fine but if you don’t you will a crash because GAS and Brake are compared to a dictionary expect for that BUG, all testing seems to be fine along as the user type in the correct input.

1. **Errors**: A list in bulleted form of all known errors and deficiencies.

There is a deficiencies with the user input if you enter in any else then what is ask for Brake or GAS then the Code crash because GAS and Brake are being compared to a dictionary. I did not code input validation for the two inputs (GAS, Brake).

1. **Measures and Assessment**: An outline of project measures of success, how well you believe this projects meets these measures.

I believe this project meet the measure. I know this from the information giving to me by the Website, Jan and Mario. I believe I did very well on this assignment give my issues. This leave me to believe that was successful in term for the requirements for the project but felt that I didn’t meet my own wants. Over all, I feel I did very well on this project.

1. **Summary**: A brief summary description of the design and implementation, including how much your initial design plan evolved, the final result you achieved and the amount of time you spent as a programmer in accomplishing these results. This should be no more than two paragraphs.

First I wrote three classes in C++, when I wrote five classes. Then I cut them down to four and then converted to python. Python I wrote even more classes to then look it again and see that I had a lot of repeating code. I then cut the code down to 4 classes. Then, I trying testing and running the code. I felt in a situation because my code was importing files twice. Python, will not allow this, so I had to rewrite all my class again this time I write two because of the limit time I had left.

I stuck a dub down ver of my code and got some help from some of my classmates and got my dub down version work which meets the requirement. This is what I did for my final project. I spend over 30 hour working on this project to produce the code I am submitting.

.**Comments**: A paragraph or so of your own comments on and reactions to the final lab project.

I liked it the idea but overall it was my lack of understanding and planning that made this project harder than it seemed. Expect for that there is nothing else about the project I have issue with. Over all, I liked the project and wish I did more time on it but I don’t so I complete that meets the requirements. I will said that this project has been hard to complete with all the setbacks but I feel glad that I can say I stuck through ugly times and came through on the other side with more knowledge than I start with. I just wish I did not spend over 30 hours on this project.