



ELEC 376 Assignment 1

Presented to: Mariam Guizani and Teaching Assistants

Assignment 1

ELEC 376

Electrical and Computer Engineering

Faculty of Engineering and Applied Science

Queen's University

Prepared by

Isaiah Iruoha

09/30/2024

Task 1

Question 1:

Line 11 of the code creates an object called `inData` of type `ifstream` which stands for “input file stream”. This object is used to read data from files. It allows for a connection between the program and a file, pulling information from that file.

Question 2:

The line 21 will check whether the `ifstream` object `inData` was able to open the file. If the file couldn't be opened (this means `inData` is in an error state), the program will print the error message using `cerr` (standard error stream). After printing the error it will return with a value of 1 to exit.

Question 3:

`ifstream` (this is the input file stream): This class is used for reading data from files. It opens a file and allows the program to pull in data from the program using operations.

`ofstream` (output file stream): This class is used for writing data to files, it will also open a file but then it will allow the program to send data from the program to file using output operations.

Question 4:

While `outData <<` sends the data to the stream, it is the **`close()`** method from the class that will finalize the process and guarantees that everything is saved to the file. It flushes the data and writes it to the output file on the disk.

Question 5:

The correct answer is C. “The Product Owner guides the product direction and the Scrum Master guides its implementation”.

Question 6:

When it comes to this specific scenario I believe Agile is the correct approach for building the system.

This hypothesis is based on the fact that the police department isn't sure what all the requires features are yet and they are eager to get the web application up and running as soon as possible. Agile works well in these situation as it encourages front loading the development, allowing for adaptation as more information comes from the police department.

Question 7:

The key difference is that the product backlog is a much more wholesome view of the product, it includes everything that needs to be done for the entire product. All features enhancements, bug fixes and technical work that needs to be done at some point. The spring backlog is much shorter and is only focused on tasks that come from the product backlog that fall within the scope of the current sprint (which is usually within a 2-4 week period of work).

Task 2

Question 1:

```
Hi there! This outputs the number of times  
a word appears in Hamlet by William Shakespeare.  
Please enter the word to search for: to  
32013 words were searched, and the word 'to' was found 754 times.  
(ELEC292) (base) isaiah@MacBook-Pro-5 a1_task2 %
```

This function was additionally tested using the input “to” which returned 754. After closer analysis this was as a result of:

“’to”: 1 occurrence

“[to”: 2 occurrences

"to": 734 occurrences

"to-day": 2 occurrences

"to-morrow": 4 occurrences

"to-night": 11 occurrences

My code is built to recognize characters I noticed in the text that were included in sections of text, such as square brackets and quote terms. So this situation matched “-to”, “’to”, “[to” and “to”.

Properly demonstrating the build out of the hyphen functionality.

Task 3

Question 1:

Assignments > Assignment 1 > a1_task3 > QuizResults.txt

1	Employee Quiz Responses			
2	Employee ID	Score	Redo Quiz	
3	-----			
4	1	1234567	5	no
5	2	9876534	3	no
6	3	9912376	4	no
7	4	7652090	2	yes
8	5	1193124	4	no
9	6	8735568	-1	yes
10	-----			
11	Average	3.00		

Task 4

Question 1:

```
Enter a secret message: Hello World
Encrypted message: gWDDT iTUDL
Decrypted message: Hello World
```