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CMSC140  Prof. Laratta 11/14/21

Project 4 Pseudocode & flow chart

Pseudocode

1. Prototype functions: numOfEmployees, displayInfo.

2. Function numOfEmployees:

a. Cout asking for the number of employees in the company followed by outFile to get the data and display it in the file. Do not accept number less than 1

b. Reads an item of input, while the input is invalid, display an error message, read the input again, end while input validation.

3. Global variable that writes to a file called ofstream textOutput;

4. Define variables needed in the program.

5. Create the file “employeeAbsences” using outFile.open("employeeAbsences.txt");

6. Call out function: NumOfEmployees

7. For loop to process the amout of employees.

a. Cout asking for employee id followed by fileOutput to get the data and display it in the file.

b. Cout asking for the number of days the employee missed followed by fileOutput to get the data and display it in the file. Can’t be a negative int.

c. Reads an item of input, while the input is invalid, display an error message, read the input again, end while input validation.

8. Arithmetic that takes the number of employees in the company and the total number of days absent for all employees during the year and calculates the average number of days absent based off of the 2 variables.

9. Ending statements which display PROGRAMMER\_NAME, PROJECT\_NUMBER, and DUE\_DATE the file and the consloe.

Flow Chart

Diagram

Description automatically generated

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test Case # | Input | Actual Input | Expected Output | Actual Output | Did the test pass? |
| 1 | # of employees:  3  Employee id’s and days of absence  1111, 3  2222, 4  3333, 18 | # of employees:  3  Employee id’s and days of absence  1111, 3  2222, 4  3333, 18 | 3 employees absent for total of 25 days  Average: 8.333 | 3 employees absent for total of 25 days  Average: 8.333 | yes |
| 2 | # of employees:  3  Employee id’s and days of absence  5748, 8  3524, -4 (error) 4  1734, 2 | # of employees:  3  Employee id’s and days of absence  5748, 8  3524, -4 (error) 4  1734, 2 | 3 employees absent for total of 14 days  Average: 4.67 | 3 employees absent for total of 14 days  Average: 4.67 | yes |
| 3 | # of employees:  0 (error) 2  Employee id’s and days of absence  1738, 20  6666, 4 | # of employees:  0 (error) 2  Employee id’s and days of absence  1738, 20  6666, 4 |  |  | yes |

Test case 1

Text

Description automatically generated

Text

Description automatically generated

Test case 2

Text

Description automatically generated

Graphical user interface, text

Description automatically generated with medium confidence

Test case 3

Text

Description automatically generated

Graphical user interface, text, application

Description automatically generated

Lessens learned

By doing this project, I feel like I have more confidence when using loops. I was able to use a while loop for input validation rather than an if statement. I used a for loop to loop each employee’s id and days absent depending on the total amount of employees. It was rather difficult to save the data for each loop, but I was able to store each employee id into the .txt file.

I learned how to use functions to organize my code. It is so much easier to make functions to call out in your program, rather than writing hundreds of lines of code. I think I still need more experience with functions to master using them in the right situation.

Through this project, I learned to pay more attention and take more notes in class because I was very confused when doing this project. In the future, I should start doing my project at least 5 days before they are due. Although I was lucky to finish this project on time, I may not be in the future so starting early gives me time to ask for help or organize my thoughts.