

CS150 Assignment 4

Car Rental Invoice Calculator

Date assigned: Wednesday, October 4, 2017

This is an individual assignment

Due: Monday, October 16, 2017, 9:15 am (25 points)

Goals:

- Loops
- running sums
- formatted output

You have been asked by a car rental company to write a program to create invoices for customers.

Your program is to ask the user for the month, the year, the current day of the month, the weekday rate, the weekend rate, and the number of days the customer will be renting the car. You will then output an invoice showing the date (day of month), day of the week, charge for that day, and a running sum. After the table you are to display the total cost.

```
*****  
Car Rental Calculator  
*****
```

```
What is the month? 9  
What is the year? 2016  
What is the day of the month? 28
```

```
What is the weekday rate? 11.00  
What is the weekend rate? 7.50
```

```
How many days will you rent the car? 6
```

Date	Day	Daily Cost	Running Sum
28	Wednesday	11.00	11.00
29	Thursday	11.00	22.00
30	Friday	11.00	33.00
1	Saturday	7.50	40.50
2	Sunday	7.50	48.00
3	Monday	11.00	59.00

Total Cost			59.00

```
Press any key to continue . . .
```

Some things to note:

1. Assume that the user enters only valid values.
2. Use setw to format the table as shown in the sample output. Hint: Each column is 14 characters wide.
3. In the table, always display a blank line after Saturday.
4. All monetary amounts must be displayed to 2 decimal places.
5. There must be no magic constants in your program.
6. Note that a client could rent a car and that car rental could span different months but will not span years.

You determined leap years, days of the week, and the number of days in the month for the previous assignment. You must incorporate that code into this assignment.

NOTES:

- You **must** follow the coding standards presented in class and provided on the class website.

- In the formulas, the following numbers are meaningful and **must** be declared as **const** with **meaningful names**. 4, 7, 12, 31, 100, 400.
- The names of the days of the week **must** be **const strings**
- The positions of the days of the week, 0-6, Sunday-Saturday, **must** be **const**
- You will find other constants that need to be **const** as you code.

To complete this assignment you must submit the following:

1. An electronic copy of your program on grace

- a. Add new project named 04_CarRentalCalculator to your previously created assignment solution called PUNetIDAssignments. It is *vital* that you name your project correctly!
- b. Type your program (fully documented/commented) into the project. The comment block at the top of the program needs to contain your name, the date the assignment is due, the class name, assignment number and name, and a brief description of the program.
- c. Pay attention to the example output! Your program's output must look **exactly** like the example output! The spacing and newlines in your output must match exactly.
- d. Your program **must** use if statements, logical operators, constants, and switch statements.
- e. Make sure that your program compiles and runs correctly. If you get any errors (or warnings), double check that you typed everything correctly. Be aware that C++ is case-sensitive.
- f. Once you are sure that the program works correctly it is time to submit your program. You do this by logging on to grace and placing your complete solution folder in the **CS150-02 Drop** folder. This solution folder must contain four projects we have done this semester.
- g. The program must be in the drop folder by 9:15 am on the day that it is due. Anything submitted after that will be considered late.

2. A hard copy of your program

- a. The hard copy must be placed on the instructor's desk by 9:15 am on the day that it is due.
- b. The hard copy must be printed in color, double-sided, and stapled in the upper-left corner if necessary. I do not bring a stapler to class.

Good luck! And remember, if you have any problems, come and see me straight away.

The printers are slow. Do NOT expect to be able to print your code 10 minutes before class!