Miami University

College of Engineering and Computing

Department of Computer Science and Software Engineering

CSE-278 Systems I   Fall 2018

Homework 2

As usual, please read the "guidelines" document on how to turn in this project. Please follow the recommendations there and on the syllabus, as how you should manage your time.

This is a group project. *The leader of the group will be announced in class. Under certain circumstances, you will be allowed to work on your own.*

Due date: Mon Sep 21, 2018 11:00 pm .

This homework will test your abilities to define functions, work with the `string` class, do simple file I/O, and check on your math computation.

The Problem

You work for a consulting company that charges its customers for projects The upcoming projects are always on a file: `proj-in.txt` and have the following format:

    Name monthS dayS yearS monthE dayE yearE,

indicating the name of the project, and estimated starting and ending dates. You may assume that the file has been validated for errors. Note the format of the month. For example:

```
PR-ATT-2   Sep   5    2018        Dec    15     2020
LE-GE-3    Oct   15   2019        Jan    20     2021
```

You are going to calculate the estimated charges to the customer. There are two models.

Model A. A simple, fixed cost $600.00 per diem of duration. In this way if the project lasts 15 days, the cost would be $9,000.00.

Model B. To help offset accrueing costs, one of the financial analysts has proposed a *compound interest model*, at a .0164% increased cost per

diem. with an starting cost of \$600.00. In this way, if current day cost C, the next day will cost $C(1 + 0.000164)$, and so on.

To solve the above problems, you must:

1. Implement the class `Date2`, whose header file is available.

2. Write a main program which reads the file, and estimate costs for each project listed on the file.

3. Your program must contain a function:
   `unsigned day_count(const Date2 & psta, const Date2 & pend);`
   which returns the number of days between `psta` and `pend`. You may put it the same file as main, or in another file.

Requirements:

1. All methods in *Date2* must be implemented, even if you do no use them.

2. For full credit, you must implement Model B. If you implement only Model A, indicate so in you cover. If you implement Model B, there is no need to implement Model A.

3. Any variation on the use of your program, make sure you indicated in the appropriate section in the cover.

4. Your executable must be called `proj_charges`.

Hints and Suggestions

– How much the company will be charging on the 200day of work in the Model B?

– In the Model B, the amount charged per day is a geometric sequence.

– *Make sure your program runs*, even if does not have all the functionality. Indicate in your cover if this is the case.