

CPSC301 - Assignment 2

Description: A program is needed to calculate employee salaries for a small company. Employee information is retrieved from a text file and used to calculate an employee's wage for the week. The results are then stored in a second text file.

1. Create the following "input.txt" file. Each record consists of a firstName, lastName, hours worked, and pay rate:

```
Maria Brown 60.0 38.25
Jeffrey Jackson 45.0 32.25
Bernard Smith 30.0 18.0
Matthew Davenport 20.0 15.5
Kimberly Macias 32.5 21.5
Amber Daniels 22.25 16.75
```

2. Each record will be saved in an instance of a CLASS called **Person**. The person class will be defined as follows (**HINT: this should go in a file called person.h**):

```
//begin person.h
#ifndef PERSON_H
#define PERSON_H

#include <string>
using namespace std;
class Person
{
private:
    string lastName;
    string firstName;
    float payRate;
    float hoursWorked;
public:
    Person();
    void setLastName(string lName);
    string getLastName();
    void setFirstName(string fName);
    string getFirstName();
    void setPayRate(float rate);
    float getPayRate();
    void setHoursWorked(float hours);
    float getHoursWorked();
    float totalPay();
};
```

```
        string fullName();  
};  
#endif // end person.h
```

4. You will need to make a separate file called `person.cpp`. The first line of the file should have an include for the `.h` file, followed by proper definitions for all the functions in the header file. The first 5 lines of `person.cpp` are shown below.

Note the **Classname:: <ret type> funcName()** structure here. The “`::`” is referred to as a scope resolution operator. It lets the compiler know that this code is defining a function for the class **Person**, and not a bare function that can be used anywhere. It also lets the compiler know that the variables you reference can be found within the class. This is required, because they are private otherwise.

```
#include "person.h"  
string Person::getFirstName() {  
    return firstName;  
}
```

5. Make a new file called **pay.cpp** that includes your `main()` function, `#include "person.cpp"` (plus any other necessary includes), and all of the following requirements.

6. An array that is sized to hold up to 20 **employees** (employees will be of the **Person** class). The company employs at most 20 employees at any given time therefore we can be certain the file will never contain more than 20 records. NOTE: Only arrays can be used in this assignment.

7. A function **readData** to read the data from “input.txt” and store it in the **employees** array. NOTE: the array and its size need to be passed to the function and the file should be read only once in the program.

8. The function **writeData** to write the results to “output.txt”. NOTE: the array and its size need to be passed to the function.

The function should use the **fullName()** and **totalPay()** functions from the **Person** class to write to the file.

Example of “output.txt”:

```
Maria Brown 2295.0  
Jeffrey Jackson 1451.25  
Bernard Smith 540.0  
Matthew Davenport 310.0
```

Kimberly Macias 698.75
Amber Daniels 372.69