

CS 150

Programming Assignment #2

If Statements

Date Assigned: Monday, September 13, 2010

Design Documents: Thursday, September 16, 2010 5 pm (5 points)

Date Due: Tuesday, September 21, 2010 1:00 pm (25 points)

Total Points: 30 pts

For this project, you need to build a weekly paycheck calculator for your employees at *Forest Grove Code Emporium*. The software must ask for the employee's first and last name, the number of hours worked, and the number of lines of code written that week. Employees that worked more than 60 hours a week are paid \$45 an hour. Employees that worked 60 hours or less a week but more than 40 hours a week are paid \$35 an hour. All other employees are paid \$30 an hour. Any employee that writes more than 1,000 lines of code receives a bonus of \$1,000. The paycheck calculator must also deduct pay roll taxes from the employee's pay. The payroll tax is 11% for employees that make over \$1,900 a week and 7% for everyone else. All employees work less than 100 hours a week. No employee can receive credit for working a partial hour.

You need to display to the user the gross pay (before taxes), the tax paid, and the net pay (after taxes).

Sample input and output

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*****
|      Forest Grove Code Emporium Paycheck Generator      |
*****

Enter the employee's first name: John
Enter the employee's last name : Smith
Enter the hours worked: 49
Enter the lines of code written: 800

Pay Check for John Smith
-----
49 hours * $35 per hour = $1715.00
Lines of code bonus      = $   0.00
-----
Gross Pay                 = $1715.00
-----
Payroll tax 7%            = $ 120.05
-----
Net Pay                   = $1594.95
```

Submit an electronic copy of your design document

Before you start you need to think about the data in your program and the calculations you will need to perform. Answer the following questions in a **new** GoogleDoc (**CS150_02ProgramDesignPUNetID**) and share it with the instructor (profchadd@gmail.com). Be sure to answer the questions in complete sentences where appropriate. This design document is due on **Thursday at 5pm**.

Design Questions:

1. Briefly describe the data and information that your program will need to use.
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6. What operations will need to be protected by the decision statements from 5?

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1. Create a new C++ project in Visual Studio. Name your project **02Ifsxxxxxxxx**, where xxxxxxxx must be replaced by your PUNetID. As an example, my project would be called "02Ifwill4614". It is vital that you name your project correctly!
2. Type the solution (**fully documented/commented**) to the problem into your project.
3. Remember to enter in your name as the author of the program.
4. Make sure that your program compiles and runs correctly. If you get any errors, double check that you typed everything correctly. Be aware that C++ is case-sensitive.
5. Once you are sure that the program works correctly it is time to submit your program. You do this by logging on to Turing and placing your complete project folder in the **CS150-02 Drop** folder. Make sure that you copy your program folder and don't move it. If you move it, then you will not have your own copy!

Notes:

1. You must format the output to look **exactly** like the sample output by using the input/output manipulators. Make sure the dollar amounts are aligned on the decimal point!
2. You must use if-statements.
3. You must follow the coding standards.
4. This is a much larger and more complicated program than assignment 1. Start early!

Submitting this project:

To receive full credit for this assignment, your project must be in the drop box by 1:00 pm on the day that it is due. Anything received after that will be considered late. Further, you must bring a **hard copy** of your program to class and place it on the instructor's desk by 1:00 pm. You must print out the program and staple it if necessary. Submit the **design document by Thursday at 5pm**.

► You must print this code, in black and white, from Visual Studio with the line numbers showing!

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CS 150

Programming Assignment #2

If Statements

Date Assigned: Monday, September 13, 2010

Design Documents: Thursday, September 16, 2010 5 pm (5 points)

Date Due: Tuesday, September 21, 2010 1:00 pm (25 points)

Total Points: 30 pts

For this project, you need to build a weekly paycheck calculator for your employees at *Forest Grove Code Emporium*. The software must ask for the employee's first and last name, the number of hours worked, and the number of lines of code written that week. Employees that worked more than 60 hours a week are paid \$45 an hour. Employees that worked 60 hours or less a week but more than 40 hours a week are paid \$35 an hour. All other employees are paid \$30 an hour. Any employee that writes more than 1,000 lines of code receives a bonus of \$1,000. The paycheck calculator must also deduct pay roll taxes from the employee's pay. The payroll tax is 11% for employees that make over \$1,900 a week and 7% for everyone else. All employees work less than 100 hours a week. No employee can receive credit for working a partial hour.

You need to display to the user the gross pay (before taxes), the tax paid, and the net pay (after taxes).

Sample input and output

```
*****
|      Forest Grove Code Emporium Paycheck Generator      |
*****

Enter the employee's first name: John
Enter the employee's last name : Smith
Enter the hours worked: 49
Enter the lines of code written: 800

Pay Check for John Smith
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49 hours * $35 per hour = $1715.00
Lines of code bonus      = $   0.00
-----
Gross Pay                 = $1715.00
-----
Payroll tax 7%            = $ 120.05
-----
Net Pay                   = $1594.95
```

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Design Questions:

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Notes:

1. You must format the output to look **exactly** like the sample output by using the input/output manipulators. Make sure the dollar amounts are aligned on the decimal point!
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CS 150

Programming Assignment #2

If Statements

Date Assigned: Monday, September 13, 2010

Design Documents: Thursday, September 16, 2010 5 pm (5 points)

Date Due: Tuesday, September 21, 2010 1:00 pm (25 points)

Total Points: 30 pts

For this project, you need to build a weekly paycheck calculator for your employees at *Forest Grove Code Emporium*. The software must ask for the employee's first and last name, the number of hours worked, and the number of lines of code written that week. Employees that worked more than 60 hours a week are paid \$45 an hour. Employees that worked 60 hours or less a week but more than 40 hours a week are paid \$35 an hour. All other employees are paid \$30 an hour. Any employee that writes more than 1,000 lines of code receives a bonus of \$1,000. The paycheck calculator must also deduct pay roll taxes from the employee's pay. The payroll tax is 11% for employees that make over \$1,900 a week and 7% for everyone else. All employees work less than 100 hours a week. No employee can receive credit for working a partial hour.

You need to display to the user the gross pay (before taxes), the tax paid, and the net pay (after taxes).

Sample input and output

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*****
|      Forest Grove Code Emporium Paycheck Generator      |
*****

Enter the employee's first name: John
Enter the employee's last name : Smith
Enter the hours worked: 49
Enter the lines of code written: 800

Pay Check for John Smith
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49 hours * $35 per hour = $1715.00
Lines of code bonus      = $   0.00
-----
Gross Pay                 = $1715.00
-----
Payroll tax 7%            = $ 120.05
-----
Net Pay                   = $1594.95
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Design Questions:

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Notes:

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2. You must use if-statements.
3. You must follow the coding standards.
4. This is a much larger and more complicated program than assignment 1. Start early!

Submitting this project:

To receive full credit for this assignment, your project must be in the drop box by 1:00 pm on the day that it is due. Anything received after that will be considered late. Further, you must bring a **hard copy** of your program to class and place it on the instructor's desk by 1:00 pm. You must print out the program and staple it if necessary. Submit the **design document by Thursday at 5pm**.

► You must print this code, in black and white, from Visual Studio with the line numbers showing!

Start Early! Do not wait until the last minute to print your program! **Good Luck! ☺**
Remember, this is an individual assignment. Refer to the syllabus for assignment policies

CS 150

Programming Assignment #2

If Statements

Date Assigned: Monday, September 13, 2010

Design Documents: Thursday, September 16, 2010 5 pm (5 points)

Date Due: Tuesday, September 21, 2010 1:00 pm (25 points)

Total Points: 30 pts

For this project, you need to build a weekly paycheck calculator for your employees at *Forest Grove Code Emporium*. The software must ask for the employee's first and last name, the number of hours worked, and the number of lines of code written that week. Employees that worked more than 60 hours a week are paid \$45 an hour. Employees that worked 60 hours or less a week but more than 40 hours a week are paid \$35 an hour. All other employees are paid \$30 an hour. Any employee that writes more than 1,000 lines of code receives a bonus of \$1,000. The paycheck calculator must also deduct pay roll taxes from the employee's pay. The payroll tax is 11% for employees that make over \$1,900 a week and 7% for everyone else. All employees work less than 100 hours a week. No employee can receive credit for working a partial hour.

You need to display to the user the gross pay (before taxes), the tax paid, and the net pay (after taxes).

Sample input and output

```
*****
|      Forest Grove Code Emporium Paycheck Generator      |
*****

Enter the employee's first name: John
Enter the employee's last name : Smith
Enter the hours worked: 49
Enter the lines of code written: 800

Pay Check for John Smith
-----
49 hours * $35 per hour = $1715.00
Lines of code bonus      = $   0.00
-----
Gross Pay                = $1715.00
-----
Payroll tax 7%          = $ 120.05
-----
Net Pay                 = $1594.95
```

Submit an electronic copy of your design document

Before you start you need to think about the data in your program and the calculations you will need to perform. Answer the following questions in a **new** GoogleDoc (**CS150_02ProgramDesignPUNetID**) and share it with the instructor (profchadd@gmail.com). Be sure to answer the questions in complete sentences where appropriate. This design document is due on **Thursday at 5pm**.

Design Questions:

1. Briefly describe the data and information that your program will need to use.
2. List the variable declarations necessary to store the data and information listed in 1.
3. Describe why you have chosen each of the data types that you used in 2.
4. Briefly describe the calculations you will need to perform in your program. Be sure to explain which variables from 2 will be used in each calculation.
5. What decision statements will you need to use in your program? For EACH decision statement specify what logical and/or relational expressions you will need to use for said decision statement.
6. What operations will need to be protected by the decision statements from 5?

To complete this assignment you must

1. Create a new C++ project in Visual Studio. Name your project **02Ifsxxxxxxxx**, where xxxxxxxx must be replaced by your PUNetID. As an example, my project would be called "02Ifwill4614". It is vital that you name your project correctly!
2. Type the solution (**fully documented/commented**) to the problem into your project.
3. Remember to enter in your name as the author of the program.
4. Make sure that your program compiles and runs correctly. If you get any errors, double check that you typed everything correctly. Be aware that C++ is case-sensitive.
5. Once you are sure that the program works correctly it is time to submit your program. You do this by logging on to Turing and placing your complete project folder in the **CS150-02 Drop** folder. Make sure that you copy your program folder and don't move it. If you move it, then you will not have your own copy!

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