

## Lab Activity #2 - IF Statements

*Use comments in your code!*

### Exercise #1:

Write a program using `if`, `else if`, and `else` statements that will ask the user to input today's temperature. If the temperature is above 80 degrees, display a message saying: "It is very hot today!" If the temperature is below 40 degrees, display a message saying: "It is very cold today!" If the temperature is between 40 and 80 degrees, display a message saying: "It is a beautiful day outside!"

Test your program with the following user input:

20  
40  
50  
80  
100

### Exercise #2:

Write a program for the IRS that will calculate income tax. You will need as input the person's annual salary. Display a message that says: This year you paid \$\_\_\_\_\_ dollars in tax. So your net salary after taxes are taken out is \$\_\_\_\_\_. Format your output to two decimal places.

Assume that the tax brackets in the U.S. are as follows:

<u>Salary</u>	<u>Tax Rate</u>
Under \$12,000	6%
\$12,001 – \$38,000	27%
\$38,001 – 55,000	33%
Over \$55,000	39%

### **Extra Credit:**

Modify your program to factor in deductions.

Ask the user if he/she has any children.

If they do have children, ask them how many, and calculate their new tax amount factoring in a 5% deduction per child off their pre-tax annual salary.

Ask the user if he/she makes student loan payments, ask how much interest was paid on the loan last year, and calculate their new tax amount by subtracting the student loan interest from the pre-tax annual salary (after child deduction).

**Exercise #3:**

Write a program using `if`, `else if` and `else` statements that will sort three characters in ascending order (smallest to largest). Remember that characters are stored in ASCII! Another way of saying this might be to put the characters in alphabetical order, but be careful of lowercase versus uppercase values, as well as handling special characters (those that are not letters, such as the dollar sign.) Ask the user to input three characters, then ultimately output the same three characters in the correct order.

**Exercise #4:**

Write a “*Choose Your Own Adventure*” program. Write a cohesive story that allows the user to make decisions as to what to do next, and display the story accordingly. For example, you might ask the user if he/she wants to take the A, F, or B train. Depending on the answer, ask another question. (Try to download this [exe](#) file for a sample!)

**Exercise #5:**

Go back to Exercise #1 of last week’s lab (Lab #2) where you created a Game Menu. Revise your game menu so that the user is given a choice between playing the “*Choose Your Own Adventure*” game (this lab’s Exercise #4) or the “*Madlib*” game (last week’s lab Exercise #5). Use an `if/else` statement so that depending on the user’s choice, the correct game will play.