**CSCI 1152, Fall 2018  
Lab Assignment 2**

# Objectives

1. Learn how to use if/else/if statements to change the program control.
2. Learn how to read input from the system console.
3. Learn how to write formatted output to the system console.
4. Learn how to declare, initialize and use variables.
5. Learn how to use mathematical operators.

# Description

For this assignment, you must follow directions exactly. Create a class with a main method, and put all of the following code into the main method:

* (10pts) Print the prompt shown below and ask the user for the number of exemptions.

The number of exemptions is an integer.

* (10pts) Print the prompt shown below and ask the user for their gross salary.

The gross salary represents dollars, which can be entered with or without decimal points.

* (10pts) Print the prompt shown below and ask the user for their interest income.

The interest income represents dollars, which can be entered with or without decimal points.

* (10pts) Print the prompt shown below and ask the user for their capital gains income.

The capital gains represents dollars, which can be entered with or without decimal points.

* (10pts) Print the prompt shown below and ask the user for the amount of charitable contributions.

The charitable contributions represents dollars, which can be entered with or without decimal points.

* (5pts) Perform the calculation of total income, as shown in the Formula section.
* (5pts) Perform the calculation of the adjusted income, as shown in the Formula section.
* (25pts) Perform the calculation of the total tax, as shown in the Formula section.
* (5pts) Print out the total income, adjusted gross income, and total tax.

# Formulas

Total Income = Gross Salary + Interest Income + Capital Gains

Adjusted Income = Total Income - (Number of Exemptions \* 1500.00) - Charitable Contributions

Total Tax computation:

Tax Bracket 1: 0% on Adjusted Income above $0 and below $10,000

Tax Bracket 2: 15% on Adjusted Income above $10,000 and below $32,000

Tax Bracket 3: 23% on Adjusted Income above $32,000 and below $50,000 + (max rate from Bracket 2)

Tax Bracket 4: 28% of Adjusted Income above $50,000 + (max rate from Bracket 2 + max rate from Bracket 3)

For example, to calculate the Total Tax on an Adjusted Income of $64,530.33:

15% \* ($32,000.00-$10,000.00) = $3300.00 <= max rate from bracket 2

23% \* ($50,000.00-$32,000.00) = $4140.00 <= max rate from bracket 3

28% \* ($64.530.33-$50,000.00) = $4068.49

Adding up the above we get a Total Tax of $11,508.49, that's a significant tax bill.

# Requirements

1. (1pt) The class name is required to be Lab2\_<your email id>
   1. For example, my class would be:

public class Lab2\_mgonzales183 {

}

1. (2pt) You must enter a multi-line comment before the class declaration. In the comment you must provide a small description of this program followed by your name.
   1. For example, my class would be:

/\*\*

\* Lab2 is a program to…….put your description here…

\*

\* @author Mark Gonzales

\*/

public class Lab2\_mgonzales183 {

}

1. The java source file MUST abide by the google java style guide. It can be found at <https://google.github.io/styleguide/javaguide.html#s7.1-javadoc-formatting>
2. (5pts) You must perform an error check on all data that is entered by the user. The error check should determine if the number is negative. If the number is negative the program should notify the user of an invalid input and prompt the user again.
3. (2pts) The code output must match the sample output.

# Sample Output

Number of Exemptions: 3

Gross Salary: 67234.45

Interest Income: 2145.32

Capital Gains: 523.01

Charitable Contributions: 872.45

Total Income: $69902.78

Adjusted Income: $64530.33

Total Tax: $11508.49

# Sample Output (with error checking)

Number of Exemptions: -1

Invalid number. Please try again.

Number of Exemptions: -3

Invalid number. Please try again.

Number of Exemptions: 3

Gross Salary: 67234.45

Interest Income: 2145.32

Capital Gains: 523.01

Charitable Contributions: 872.45

Total Income: $69902.78

Adjusted Income: $64530.33

Total Tax: $11508.49

# Testing

I will test your program as follows:

javac Lab2\_<your email id>.java

java Lab2\_<your email id>

# Activity Diagram

## Main Method