# Lab 04 - Functions & Selection Statements

**Direction: Submit your typed work(s) as an upload(s) to the Labs directory of your GitHub repository or Dropbox, or in your correct Lab04 google classroom assignment. Each part should be a separate files. The files named should be `"lab4A.txt"` and `"lab4B.cpp"` respectively.**

## Part A: In class

Your objective is to write ONLY the line number and the entire corrected line for each line that has a **syntax error** in the code segment below.

```
01 | void G(int a,int b)
02 | {
03 |  int r = (a - b) * (a * a + a * b + b * b);
04 |  return r;
05 |  return 4;
06 | {
07 |
08 | int main()
09 | {
10 |  int s, t, r;
11 |
12 |  cout >> "Enter two numbers: ";
13 |  cin >> s;
14 |  cin >> t;
15 |
16 |  cout << G(s,t) << '\n';
17 |  r = g(t,s);
18 |  cout << r << "\n";
19 |  return 0;
20 | }
```

## Part B: Take home

Your objective is to write a complete cpp program that defines the following functions and calls them in the main function.

- ☐ An int function named `RealRootsCount()` that takes three double parameters named $a$, $b$ and $c$ respectively. Given that the parameters are the coefficients of a quadratic equation of the form

  $$ax^2 + bx + c = 0$$

  , the function returns the number of real roots (zeroes) of the equation.

  **Hint: Think about the quadratic formula.**

- ☐ A void function named `TemperatureConverter()` that takes a double reference parameter and two char parameters respectively named *Temp*, *From* and *To*. It assigns *Temp* the conversion of the temperature that equals *Temp* in the unit that corresponds to *From* to the unit that corresponds to *To* if both *From* and *To* are valid units; otherwise, it does nothing. The valid units are `'F'` and `'C'` for Fahrenheit and Celsius respectively, but the case does not matter.

- ☐ A double function named `NonNegativeMean()` that takes five double parameters. It returns the average of only the nonnegative parameters. If all the parameters are negative, it returns 0.