CS4051NI Information Systems
Lab work – week 2

1. Open IDLE and in the interactive shell try out the basic arithmetic operators.

2. Write a simple "Hello World" program. A new python file can be created by clicking on File>New File. Once you have written the code, the program can be run by clicking on Run>Run Module.

3. Write a simple program that asks the user to enter their name and prints out "Hello *name*, have a nice day!" where *name* should be the name that the user entered.

4. Write a simple program that asks to enter two numbers and prints out their sum and difference. Write comments to describe your code.

5. Write a program that computes the value of the algebraic expression:

$$x^3 + 3x^2y + 3xy^2 + y^3$$

The program should ask the user to input the values of x and y. Write comments to describe your code.

6. Write a program that asks the user to input the radius of a circle. The program should calculate the area of the circle $A = \pi r^2$ and print it out.

7. Write a program that asks the user to input length and breadth of a rectangle. Then the program should calculate to area and perimeter of the rectangle and print them out. *Area = $l \times b$; Perimeter = $2(l + b)$;*

8. Write a program that asks the user to enter the coefficients a,b and c of a quadratic equation $ax^2 + bx + c = 0$. The program should find out the values of x which are the solutions to the quadratic equation using the formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

to check your code, enter the values of a, b and c as 1, 3 and -4 respectively, the results you get should be 1 and -4

9. Write a program that asks the user to enter two numbers a and b. Then write code to swap the values of a and b, and print them out.