**Further Programming Practical Lab Week 1**

Objective: the objective of this lab is to refresh your knowledge on Java programming.

1. Write a program that randomly generates an integer between 0 and 100 (0 and 100 are inclusive). The program asks the user to enter a number repeatedly until the number matches the randomly generated number. The program tells the user whether the input is too low or too high, so the user can guess the number closer to the right one at each input. Below shows a sample output:

Guess a magic number between 0 and 100

Enter your guess: 1

Your guess is too low

Enter your guess: 50

Your guess is too high

Enter your guess: 40

Your guess is too low

Enter your guess: 45

Your guess is too low

Enter your guess: 47

Your guess is too low

Enter your guess: 48

Your guess is too low

Enter your guess: 49

Yes, the number is 49

Hint: use Scanner input = new Scanner(System.in); to read user input.

1. Write a program to print the following formatted output on the console.

Degrees Radians Sine Cosine Tangent

30 0.5236 0.5000 0.8660 0.5774

60 1.0472 0.8660 0.5000 1.7321

Hint: use System.out.printf() to format the console output.

1. Write a program to print numbers in the following pattern.

How many rows you want in this pattern: 10

Here is your pattern!

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

1 2 3 4 5 6

1 2 3 4 5 6 7

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8 9

1 2 3 4 5 6 7 8 9 10

1. Write a program that computes your initials from your full name and displays them.

Hint: use String and StringBuilder to store the full name and initials.