WXES1116 Programming I
Semester 1 2014/2015
Lab 5: Arrays

1. Write a program that rotates 90 degrees clockwise a 3 by 3 matrix.

```
3 by 3 Matrix
1  5  7
3  6  9
5  3  8
After rotates 90 degrees clockwise
5  3  1
3  6  5
8  9  7
```

2. Write a program that generates 10 non-duplicate random integers within the range from 0 to 20.

3. Write a program that generates 20 random integers within the range from 0 to 100. Sort the array in descending order. Then, accepts an integer input from the user. Then, search the array using this number. Compare the performance of linear search and binary search.

```
A list of 20 random integer within 0 to 100
57, 53, 46, 83, 74, 99, 30, 75, 61, 89, 28, 30, 56, 41, 27, 32, 79, 48, 46, 88
Array in descending order
99, 89, 88, 83, 79, 75, 74, 61, 57, 56, 53, 48, 46, 46, 41, 32, 30, 30, 28, 27
Enter a number to search: 41
41 found
Linear Search - 14 loop(s)
41 found
Binary Search - 2 loop(s)
```

4. Write a program that used to create Pascal Triangle in the square matrix. The program will accept an integer from the users and use the integer to create the Pascal Triangle.

```
Enter the number of row of Pascal Triangle to generate: 6
The Pascal Triangle with 6 row(s)
1  0  0  0  0  0
1  1  0  0  0  0
1  2  1  0  0  0
1  3  3  1  0  0
1  4  6  4  1  0
1  5  10  10  5  1
```

5. Write a program that used to calculate the sum of the following two numbers. 19285895823828369823968239832 9 + 89757937263836982368923896 82.