**Lab 9**

Make a new C++ project on Eclipse, create a new source file (yourRollNumber.cpp). Then make the Matrix class & its member functions.

Implement a class Matrix to create matrices of 2x2 & 3x3 with the following private data members:

1. int \*\*matrix – a double pointer of type integer to create a 2D array (matrix)

2. int row – an integer to store the rows in the matrix

3. int col – an integer to store the columns in the matrix

**The class shall have the following public member functions:**

**1. Matrix (int n1, int n2, int n3, int n4, int row = 2, int col = 2)** – a parameterized constructor for a 2x2 matrix

**2. Matrix (int n1, int n2, int n3, int n4, int n5, int n6, int n7, int n8, int n9, int row = 3, int col = 3)** – a parameterized constructor for a 3x3 matrix

**3. displayMatrix()**

**4. int getValue(int row, int col)** – a function to get the value at the given row and column of a matrix

**5. int RightDiagonalTotal()** - Calculates total/sum of the values in the right Diagonal of array.

**6. int HighestInRow(int row)** - Finds highest value in the specified row of the array

**7. int FindkSmallest(int k)** – a function that finds the kth smallest element in the matrix. If k is 1, return the smallest element. If k is 2 return the second smallest element and so on.

**8. Bool isIdentityMatrix**

9. Bool **isMagicSquare()**

**9. ~Matrix()** – a destructor

Write make object(s) of Matrix class in main() function to test all the above mentioned member functions