**Internet programming Lab**

**Problem 1:**

Write a program that asks the user for two numbers ( e.g. x and y) and displays the table of x till y. **(5)**

For Example:

If user enters 2 and 3

output should be:

|  |
| --- |
| 2 x 1 = 2  2 x 2 = 4  2 x 3 = 6 |

**Problem 2:**

Ask user for N i.e. number of integers he wants to input. Now create an array of size N and take its values as input from user. Once the input is complete display the integers in Ascending order.**(2)**

For above task you have to create a class MyArray.

Data Members **(1)**:

* An integer Array
* Size

Constructors **(1):**

* Parameterized constructor taking array size as parameter

Member Functions **(1+1+4+1)**:

* void input ()
* void display ()
* void sort()
* void getSize()

**Problem 3:**

Create a 2-D array in main. Take its dimensions (i.e. number of rows and columns) as input from the user. **(2)**

Also write following functions:

1. Write a method

**public static int max(int[][] a**)

that returns the maximum value in the 2d parameter array a. **(3)**

1. Write a method

**public static boolean isRowMagic(int[][] a)**

that checks if the array is row-magic (this means that every row has the same row sum). **(3)**

1. Write a method

**public static boolean isSequence(int[][] a)**

that checks to see if the array is square (suppose it is n x n), and contains each of the digits from 1 to n\*n, e.g. 1, 2, ..., 16 for a 4 x 4 array. **(7)**

**Problem 4:**

Create a class named **Invoice** that a departmental store might use to represent an invoice for items sold at the store. An Invoice should include four pieces of information as instance variables.**(2)**

1. item number (type String)

2. item description (type String)

3. quantity of the item being purchased (type int)

4. price per item (double)

* Your class should have a constructor that initializes the four instance variables. **(2)**
* Write public set and a get method for each instance variable. Note the Business Rules for writing public set function. If the quantity is not positive, it should be set to 0. If the price per item is not positive, it should be set to 0.0. **(2)**
* Write a public instance (non-static) method named getInvoiceAmount that calculates the invoice amount (i.e. multiplies the quantity by the price per item), then returns the amount as a double value. **(4)**
* Write a class named InvoiceTest having main method. Create an array of objects of Invoice class and demonstrate/ call getInvoiceAmount for multiple objects. Use java.util.Scanner class to create objects with user specified values. **(5)**