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package lab8;

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public class Lab8 {

int [][] matrix = new int[4][4]; // instantiated a multi-dim. array

public void populateMatrix(){

System.out.println("Populate the Matrix....");//loading

int [] num = new int[50]; // created an array with 50 positions

//load the array.

for (int i = 0; i < num.length; i++) {

num[i] = i+1; //adding 1 because of 1-50 condition

System.out.print(num[i]+" ");//

}//for

System.out.println("");

//shuffle

System.out.println("Shuffling....");

for (int i = 0; i < num.length; i++) {

int index = (int)(Math.random() \* num.length);

//swap

int temp = num[i];

num[i] = num[index];

num[index] = temp;

//System.out.println("Swapping " + num[i] + " with "+ num[index]);//

}//for

for (int i = 0; i < num.length; i++) {

System.out.print(num[i] + " ");//

}//for

System.out.println("");//

//load the 2D array

int k = 0;

for (int i = 0; i < matrix.length; i++) {//rows loading

for (int j = 0; j < matrix[i].length; j++) { //columns loading

matrix[i][j] = num[k]; // loading the previous shuffled

k++;

}//j

}//i

}//populateMatrix

public void outputMatrix(){

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

for (int i = 0; i < matrix.length; i++) {

for (int j = 0; j < matrix.length; j++) {

System.out.print(matrix[i][j] + "\t");

}//i

System.out.println("");

}//j

System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

}//outputMatrix

public int[] findLocationOflargest(){ //returns two numbers to indicate the location of the array

System.out.println("Finding Largest...."); //echo

int largest = -1; //initial condition

int[] location = {-1,-1}; // intial condition array to reveal the location

for (int i = 0; i < matrix.length; i++) {

for (int j = 0; j < matrix.length; j++) {

if(largest < matrix[i][j]){ // checking

largest = matrix[i][j]; // declaring

location[0] = i; // change the values to reflect location

location[1] = j; // changes values to refelect ythe location

System.out.println("New largest is " + largest);

}//if

}//j

}//i

return location;

}

public static void main(String[] args) {

Lab8 ans = new Lab8();

ans.populateMatrix();

ans.outputMatrix();

int[] place = new int[2];

place = ans.findLocationOflargest();

System.out.println("The location of the largest in the two dimensional array:("+ place[0]+ "," + place[1]+")");

System.out.println("The largest is: " + ans.matrix[place[0]][place[1]] );

}//main

}//class

Output:

run:

Populate the Matrix....

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

Shuffling....

30 21 31 5 42 45 7 8 6 4 26 20 43 32 37 23 3 25 19 46 13 22 1 48 27 36 9 14 11 49 17 16 47 44 15 18 29 33 24 39 10 12 40 41 2 50 34 28 38 35

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30 21 31 5

42 45 7 8

6 4 26 20

43 32 37 23

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

Finding Largest....

New largest is 30

New largest is 31

New largest is 42

New largest is 45

The location of the largest in the two dimensional array:(1,1)

The largest is: 45

BUILD SUCCESSFUL (total time: 0 seconds)