

Lab 13

Single dimension array

Name-Surname.....Student No.....Section (LAB).....

Lab instruction

1. Write the java program following the example.

PassTwoDimensionalArray.java is a program that can create 2 dimensions array. The method `getArray()` will get the number from user into each array. The method `sum()` is summary all of number in the m array.

```
import java.util.Scanner;

public class PassTwoDimensionalArray {
    public static void main(String[] args) {
        int[][] m = getArray(); // Get an array

        // Display sum of elements
        System.out.println("\nSum of all elements is " + sum(m));
    }

    public static int[][] getArray() {
        // Create a Scanner
        Scanner input = new Scanner(System.in);

        // Enter array values
        int[][] m = new int[3][4];
        System.out.println("Enter " + m.length + " rows and "
            + m[0].length + " columns: ");
        for (int i = 0; i < m.length; i++)
            for (int j = 0; j < m[i].length; j++)
                m[i][j] = input.nextInt();

        return m;
    }

    public static int sum(int[][] m) {
        int total = 0;
        for (int row = 0; row < m.length; row++) {
            for (int column = 0; column < m[row].length; column++) {
                total += m[row][column];
            }
        }

        return total;
    }
}
```

2. Run and test the program.
3. Modify the program to show all numbers by using void method

*****CHECK POINT #1*****

4. Write a Java program for grading multiple choices test. The student id and answer are collected in 2 dimension array in picture 1. The key to correct the score is picture 2. You can use the list of student answer as an initial in your code. The program will display the student number and the correct score as the sample run.

	0	1	2	3	4	5	6	7	8	9
Student 0	A	B	A	C	C	D	E	E	A	D
Student 1	D	B	A	B	C	A	E	E	A	D
Student 2	E	D	D	A	C	B	E	E	A	D
Student 3	C	B	A	E	D	C	E	E	A	D
Student 4	A	B	D	C	C	D	E	E	A	D
Student 5	B	B	E	C	C	D	E	E	A	D
Student 6	B	B	A	C	C	D	E	E	A	D
Student 7	E	B	E	C	C	D	E	E	A	D

Picture 1

Key to the Questions:

	0	1	2	3	4	5	6	7	8	9
Key	D	B	D	C	C	D	A	E	A	D

Picture 2

```
Student 0's correct count is 7
Student 1's correct count is 6
Student 2's correct count is 5
Student 3's correct count is 4
Student 4's correct count is 8
Student 5's correct count is 7
Student 6's correct count is 7
Student 7's correct count is 7
```

Sample run

```
char[][] answers = {
    {'A', 'B', 'A', 'C', 'C', 'D', 'E', 'E', 'A', 'D'},
    {'D', 'B', 'A', 'B', 'C', 'A', 'E', 'E', 'A', 'D'},
    {'E', 'D', 'D', 'A', 'C', 'B', 'E', 'E', 'A', 'D'},
    {'C', 'B', 'A', 'E', 'D', 'C', 'E', 'E', 'A', 'D'},
    {'A', 'B', 'D', 'C', 'C', 'D', 'E', 'E', 'A', 'D'},
    {'B', 'B', 'E', 'C', 'C', 'D', 'E', 'E', 'A', 'D'},
    {'B', 'B', 'A', 'C', 'C', 'D', 'E', 'E', 'A', 'D'},
    {'E', 'B', 'E', 'C', 'C', 'D', 'E', 'E', 'A', 'D'}};
```

Student answer

*****CHECK POINT #2*****

-----END OF LAB-----