King Fahd University of Petroleum and Minerals
Information & Computer Science Department
ICS 103 – Computer Programming in C
Summer Semester 2008 (073)

Lab # 13 (2-D Arrays)

Objective:

1. Declaring and referencing 2-D arrays
2. Passing 2-D arrays to functions

Exercise # 1:

The following table shows the scores of four students in three quizzes:

	STUDENT 1	STUDENT 2	STUDENT 3	STUDENT 4
QUIZ 1	8	10	3	8
QUIZ 2	6	0	1	9
QUIZ 3	10	7	5	9

Write a program that reads the scores of the quizzes into 2-D array **SCORE** of size 3x4 row-wise. The program then prints:

1. *A table of student numbers and their total scores*
2. *The student with the highest total score*
3. *The student with the lowest total score*

Sample Output:

```
Enter scores data >
8   10   3   8
6    0   1   9
10   7   5   9
Student #   Total Score
  1           24
  2           17
  3            9
  4           26
Student # 4 has the highest total score
Student # 3 has the lowest total score
```

Exercise # 2:

Write a program that reads a 2-D integer array **A** of size 4 × 4 row-wise and passes it to a logical function **UpTriangMatrix** that checks if array **A** is an **upper triangular matrix** (i.e. A[i][j] = 0 for i > j) or not. The main function then prints a proper message accordingly.

Sample Output:

```
Enter the elements of 4x4 integer array row-wise >
3   1   5   8
0   2   6   4
0   0   3   7
0   0   0   8
The array is an upper triangular matrix
```