

NAME: AREEFA SAMAR
ROLL NO: CT-25062
DEPARTMENT: CSIT
SECTION: B

QUESTION 01: MARKS REPORT

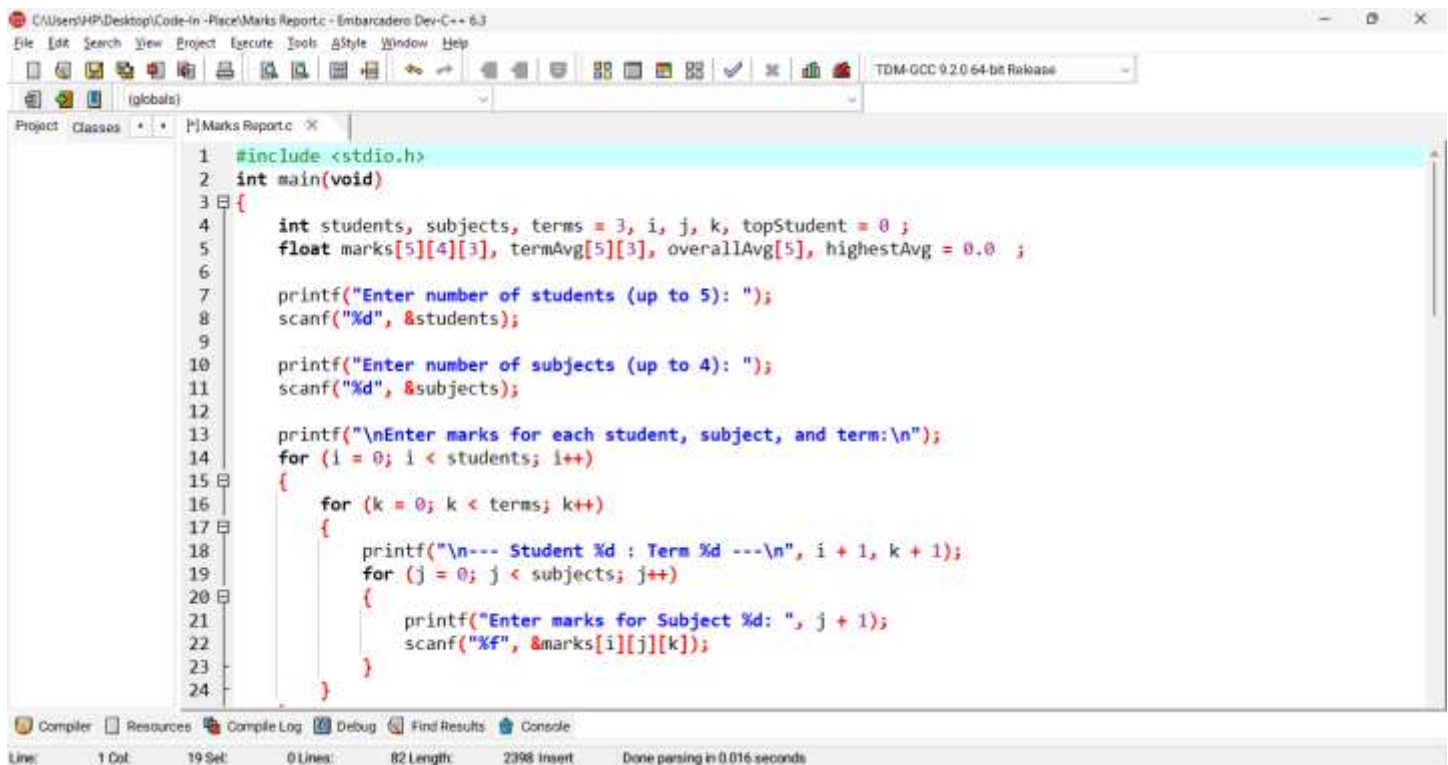
A school stores students' marks for 3 terms in a 3D array where:

The first dimension represents the students (up to 5), The second dimension represents the subjects (up to 4), and the third dimension represents the terms (3).

Write a program to:

Input marks for all students, subjects, and terms. Calculate each student's average marks per term and their overall average. Display the highest overall scorer and the term in which they performed best.

SOURCE CODE:



```
1 #include <stdio.h>
2 int main(void)
3 {
4     int students, subjects, terms = 3, i, j, k, topStudent = 0 ;
5     float marks[5][4][3], termAvg[5][3], overallAvg[5], highestAvg = 0.0 ;
6
7     printf("Enter number of students (up to 5): ");
8     scanf("%d", &students);
9
10    printf("Enter number of subjects (up to 4): ");
11    scanf("%d", &subjects);
12
13    printf("\nEnter marks for each student, subject, and term:\n");
14    for (i = 0; i < students; i++)
15    {
16        for (k = 0; k < terms; k++)
17        {
18            printf("\n--- Student %d : Term %d ---\n", i + 1, k + 1);
19            for (j = 0; j < subjects; j++)
20            {
21                printf("Enter marks for Subject %d: ", j + 1);
22                scanf("%f", &marks[i][j][k]);
23            }
24        }
25    }
```

CAUsers\HP\Desktop\Code-In-Place\Marks Report.c - Embarcadero Dev-C++ 6.3

File Edit Search View Project Execute Tools Style Window Help

(globals)

Project Classes Marks Report.c

```
25
26
27 for (i = 0; i < students; i++)
28 {
29     float totalAllTerms = 0.0;
30     for (k = 0; k < terms; k++)
31     {
32         float termTotal = 0.0;
33         for (j = 0; j < subjects; j++)
34         {
35             termTotal += marks[i][j][k];
36         }
37         termAvg[i][k] = termTotal / subjects;
38         totalAllTerms += termTotal;
39     }
40     overallAvg[i] = totalAllTerms / (subjects * terms);
41 }
42
43 for (i = 0; i < students; i++)
44 {
45     if (overallAvg[i] > highestAvg)
46     {
47         highestAvg = overallAvg[i];
48         topStudent = i;
```

Compiler Resources Compile Log Debug Find Results Console

Line: 25 Col: 6 Sel: 0 Lines: 82 Length: 2398 Insert: Done parsing in 0.016 seconds

CAUsers\HP\Desktop\Code-In-Place\Marks Report.c - Embarcadero Dev-C++ 6.3

File Edit Search View Project Execute Tools Style Window Help

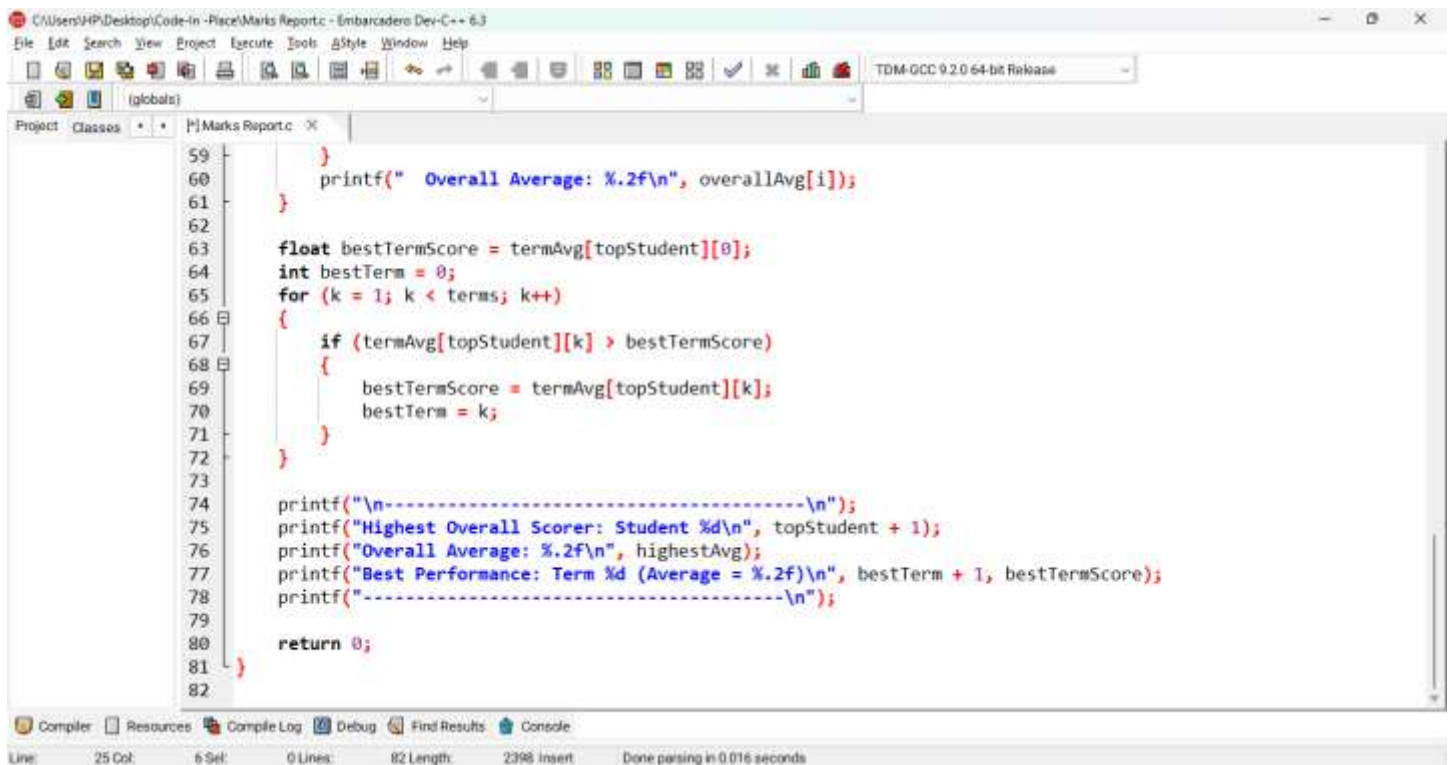
(globals)

Project Classes Marks Report.c

```
46 {
47     highestAvg = overallAvg[i];
48     topStudent = i;
49 }
50
51
52 printf("\n--- Averages per Student ---\n");
53 for (i = 0; i < students; i++)
54 {
55     printf("\nStudent %d:\n", i + 1);
56     for (k = 0; k < terms; k++)
57     {
58         printf("    Term %d Average: %.2f\n", k + 1, termAvg[i][k]);
59     }
60     printf("    Overall Average: %.2f\n", overallAvg[i]);
61 }
62
63 float bestTermScore = termAvg[topStudent][0];
64 int bestTerm = 0;
65 for (k = 1; k < terms; k++)
66 {
67     if (termAvg[topStudent][k] > bestTermScore)
68     {
69         bestTermScore = termAvg[topStudent][k];
```

Compiler Resources Compile Log Debug Find Results Console

Line: 25 Col: 6 Sel: 0 Lines: 82 Length: 2398 Insert: Done parsing in 0.016 seconds

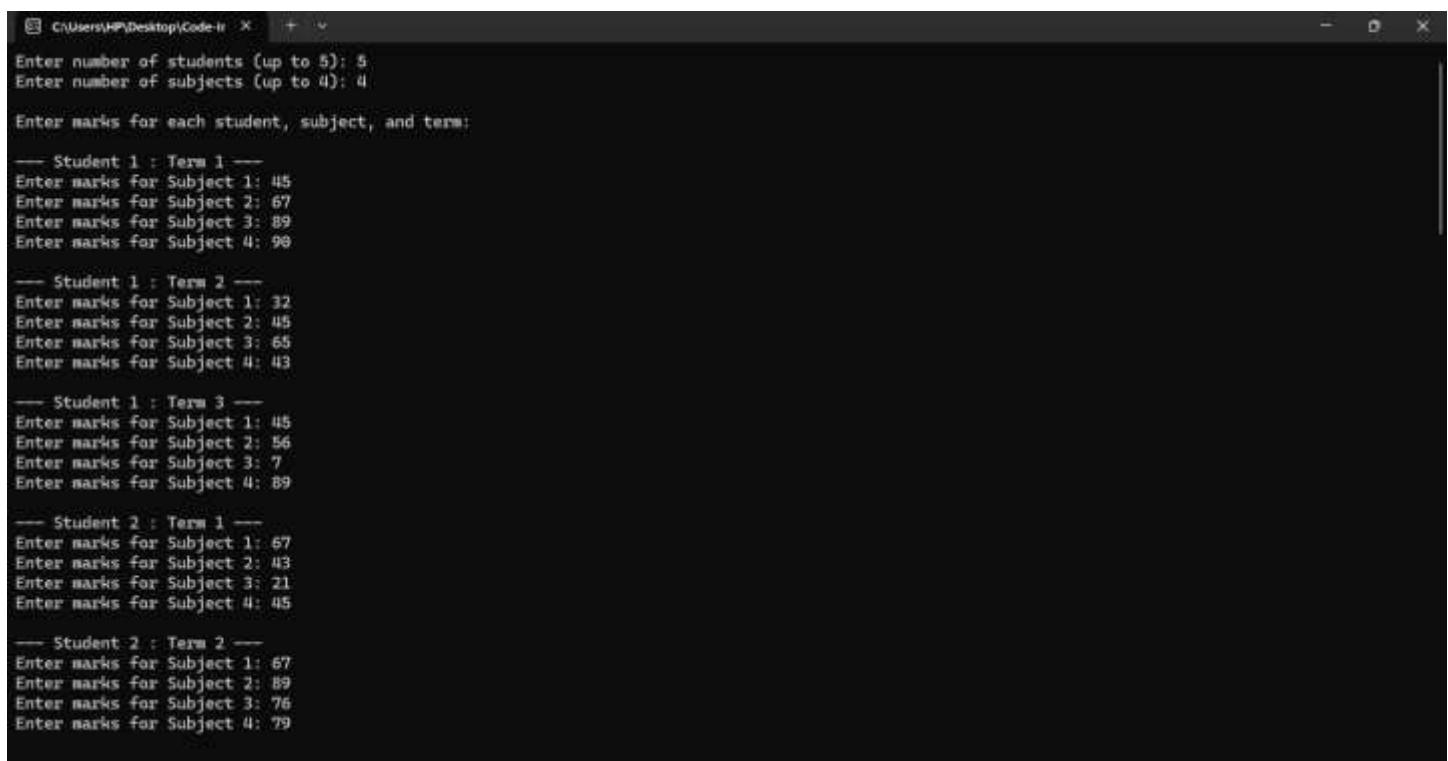


```
59     }
60     printf(" Overall Average: %.2f\n", overallAvg[i]);
61 }
62
63 float bestTermScore = termAvg[topStudent][0];
64 int bestTerm = 0;
65 for (k = 1; k < terms; k++)
66 {
67     if (termAvg[topStudent][k] > bestTermScore)
68     {
69         bestTermScore = termAvg[topStudent][k];
70         bestTerm = k;
71     }
72 }
73
74 printf("\n-----\n");
75 printf("Highest Overall Scorer: Student %d\n", topStudent + 1);
76 printf("Overall Average: %.2f\n", highestAvg);
77 printf("Best Performance: Term %d (Average = %.2f)\n", bestTerm + 1, bestTermScore);
78 printf("-----\n");
79
80 return 0;
81 }
82
```

Compiler Resources Compile Log Debug Find Results Console

Line: 25 Col: 6 Sel: 0 Lines: 82 Length: 2398 Insert: Done parsing in 0.016 seconds

OUTPUT:



```
C:\Users\HP\Desktop\Code-It >
Enter number of students (up to 5): 5
Enter number of subjects (up to 4): 4

Enter marks for each student, subject, and term:

--- Student 1 : Term 1 ---
Enter marks for Subject 1: 45
Enter marks for Subject 2: 67
Enter marks for Subject 3: 89
Enter marks for Subject 4: 90

--- Student 1 : Term 2 ---
Enter marks for Subject 1: 32
Enter marks for Subject 2: 45
Enter marks for Subject 3: 65
Enter marks for Subject 4: 43

--- Student 1 : Term 3 ---
Enter marks for Subject 1: 45
Enter marks for Subject 2: 56
Enter marks for Subject 3: 7
Enter marks for Subject 4: 89

--- Student 2 : Term 1 ---
Enter marks for Subject 1: 67
Enter marks for Subject 2: 43
Enter marks for Subject 3: 21
Enter marks for Subject 4: 45

--- Student 2 : Term 2 ---
Enter marks for Subject 1: 67
Enter marks for Subject 2: 89
Enter marks for Subject 3: 76
Enter marks for Subject 4: 79
```

```
C:\Users\HP\Desktop\Code-It >
--- Student 2 : Term 2 ---
Enter marks for Subject 1: 67
Enter marks for Subject 2: 89
Enter marks for Subject 3: 76
Enter marks for Subject 4: 79

--- Student 2 : Term 3 ---
Enter marks for Subject 1: 65
Enter marks for Subject 2: 78
Enter marks for Subject 3: 48
Enter marks for Subject 4: 56

--- Student 3 : Term 1 ---
Enter marks for Subject 1: 76
Enter marks for Subject 2: 34
Enter marks for Subject 3: 23
Enter marks for Subject 4: 7

--- Student 3 : Term 2 ---
Enter marks for Subject 1: 98
Enter marks for Subject 2: 87
Enter marks for Subject 3: 65
Enter marks for Subject 4: 56

--- Student 3 : Term 3 ---
Enter marks for Subject 1: 76
Enter marks for Subject 2: 78
Enter marks for Subject 3: 56
Enter marks for Subject 4: 87

--- Student 4 : Term 1 ---
Enter marks for Subject 1: 78
Enter marks for Subject 2: 98
Enter marks for Subject 3: 87
```

```
C:\Users\HP\Desktop\Code-It >
--- Student 4 : Term 1 ---
Enter marks for Subject 1: 78
Enter marks for Subject 2: 98
Enter marks for Subject 3: 87
Enter marks for Subject 4: 56

--- Student 4 : Term 2 ---
Enter marks for Subject 1: 43
Enter marks for Subject 2: 21
Enter marks for Subject 3: 34
Enter marks for Subject 4: 45

--- Student 4 : Term 3 ---
Enter marks for Subject 1: 67
Enter marks for Subject 2: 67
Enter marks for Subject 3: 68
Enter marks for Subject 4: 90

--- Student 5 : Term 1 ---
Enter marks for Subject 1: 76
Enter marks for Subject 2: 56
Enter marks for Subject 3: 43
Enter marks for Subject 4: 56

--- Student 5 : Term 2 ---
Enter marks for Subject 1: 78
Enter marks for Subject 2: 89
Enter marks for Subject 3: 78
Enter marks for Subject 4: 54

--- Student 5 : Term 3 ---
Enter marks for Subject 1: 45
Enter marks for Subject 2: 45
Enter marks for Subject 3: 32
```

```
C:\Users\HP\Desktop\Code-It >
Enter marks for Subject 4: 56

--- Student 5 : Term 2 ---
Enter marks for Subject 1: 78
Enter marks for Subject 2: 89
Enter marks for Subject 3: 78
Enter marks for Subject 4: 54

--- Student 5 : Term 3 ---
Enter marks for Subject 1: 45
Enter marks for Subject 2: 45
Enter marks for Subject 3: 32
Enter marks for Subject 4: 21

--- Averages per Student ---

Student 1:
Term 1 Average: 72.75
Term 2 Average: 46.25
Term 3 Average: 49.25
Overall Average: 56.08

Student 2:
Term 1 Average: 64.00
Term 2 Average: 77.75
Term 3 Average: 59.75
Overall Average: 60.50

Student 3:
Term 1 Average: 35.00
Term 2 Average: 74.50
Term 3 Average: 74.25
Overall Average: 61.25

Student 4:
```

```
C:\Users\HP\Desktop\Code-It >
Enter marks for Subject 3: 32
Enter marks for Subject 4: 21

--- Averages per Student ---

Student 1:
Term 1 Average: 72.75
Term 2 Average: 46.25
Term 3 Average: 49.25
Overall Average: 56.08

Student 2:
Term 1 Average: 64.00
Term 2 Average: 77.75
Term 3 Average: 59.75
Overall Average: 60.50

Student 3:
Term 1 Average: 35.00
Term 2 Average: 74.50
Term 3 Average: 74.25
Overall Average: 61.25

Student 4:
Term 1 Average: 77.75
Term 2 Average: 35.75
Term 3 Average: 73.00
Overall Average: 62.17

Student 5:
Term 1 Average: 57.75
Term 2 Average: 74.75
Term 3 Average: 35.75
Overall Average: 56.08
```

```
C:\Users\HP\Desktop\Code-It >
Overall Average: 56.88

Student 2:
Term 1 Average: 64.88
Term 2 Average: 77.75
Term 3 Average: 59.75
Overall Average: 69.58

Student 3:
Term 1 Average: 35.88
Term 2 Average: 74.58
Term 3 Average: 74.25
Overall Average: 61.25

Student 4:
Term 1 Average: 77.75
Term 2 Average: 35.75
Term 3 Average: 73.88
Overall Average: 62.17

Student 5:
Term 1 Average: 57.75
Term 2 Average: 74.75
Term 3 Average: 35.75
Overall Average: 56.88

-----
Highest Overall Scorer: Student 4
Overall Average: 62.17
Best Performance: Term 1 (Average = 77.75)
-----

Process exited after 63.81 seconds with return value 0
Press any key to continue . . .
```