UNIVERSITY OF ENGINEERING AND TECHNOLOGY, TAXILA





ASSIGNMENT-2

SUBMITTED TO: ENGR.SABA AWAN

SUBMITTED BY: MUHAMMAD ARSALAN

REG NO : <u>20-SE-56</u>

Create a C++ program that make use of both concepts i.e. Array of structure and array within structure by using following guidelines: [CLO 1, 10 Marks]

- 1. Create an Array of 5 Structures of Student Records
- 2. Each structure must contain: a. An array of Full Name of Student
- b. Registration Number in proper Format i.e 18-SE-24
- c. Array of Marks of 3 subjects
- d. Display that information of all students in Ascending order using "Name"
- e. Search a particular student and update its Marks of any particular subject.

SOLUTION

CODE

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🕌 20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.cpp - Code:Blocks 20.03
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 fanagement X Start here X 20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.cpp X
 Projects Files FSymbols
                        1 #include <iostream>
○ Workspace
                             #include<comio.h>
                             #include<string.h>
                             using namespace std;
                              struct student//made a structure named student that contain 3 objects
                                          char name[25];
                                           int marks[3];
                                           char reg_no[25];
                        11
                        12
                        13
                                    int main()
                        15
                                        cout<<"\n\t\tSTUDENT RECORD \n";
                                        16
                                           student record[5];//determined the value of students limit to 5
                        18
                        19
                       20
                                 int select;
                                  cout<<"\t1.ENTER THE STUDENTS RECORD\n";
                        21
                                  cout<<"\t2.DISPLAY THE RECORD\n"
                       23
                                  cout<<"\t3.MODIFY THE RECORD\n":
                       24
                                  cout<<"\t4.EXIT\n";
                        25
                       26
27
                                  switch (select)//switch to allow user to choose action want to perform
                        28
                        29
                        30
                        31
                                           for(int i=0;i<5;i++)//for loop that will execute for 5 times as we have 5 students</pre>
                        33
                                                 cout << "\nENTER DETAILS OF STUDENT NO:" <<ii+1;</pre>
                        34
                        35
                                                 cout << "\n\tENTER THE STUDENT NAME: ";</pre>
                        37
38
                                                 cin>> record[i].name;
                                                 cout << "\n\tenter THE STUDENT REG NO: ";</pre>
                        40
                                                 cin>> record[i].reg_no;
                    🦻 Code:Blocks X 💪 Search results X 🤌 Cocc X 🐧 Build log x 🕴 Build messages x 👰 Cpc/Check/Vera++ x 📝 Cpc/Check/Vera++ messages x 🦞 Coccpe X 👰 Debugger X 📝 DonyBlocks X 🔭 Fortran info X 🐁 Closed files list X 🐊 Thread search X
C:\CodeBlocks\projects\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.cpp
                                                                                                 C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 1, Pos 0 Insert
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🕌 20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.cpp - Code::Blocks 20.03
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 File Edit View Search Project Build Debug Fortran wxSmith Tools Tools- Plugins Doxy6locks Settings Help

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 Management X Start here X 20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.cpp X
                                               33
 ○ Workspace
                                                34
35
36
                                                                                                       ut << "\nenter details of student no:" <<ii+1;
                                                                                                   cout << "\n\tenter THE STUDENT NAME: ";
                                                                                                 cin>> record[i].name;
                                                37
38
39
40
                                                                                                  cout << "\n\tenter the Student REG NO: ";
                                                                                                  cin>> record[i].reg_no;
for(int j=0;j<3;j++) //again a for loop for marks as we have to give marks of 3 subjects</pre>
                                                41
                                                42
43
44
                                                                                                                 cout << "\n\nenter the marks of student in subject" << j+1 << " :";
                                                                                                                 cin >> record[i].marks[i];
                                                45
46
47
                                                                                    cout<<"
                                                48
                                                                           break;
                                                                            case 2://displaying the record
   cout << "\nstudent RECORD "<<endl;</pre>
                                                49
                                                50
51
                                                                                  cout<<endl<<endl;
                                                52
                                                                                          for ( int i=4; i>=1;i--)//display the record in ascending order
                                                53
54
55
56
57
58
59
                                                                                          for (int j=0; j<i;j++)
                                                                                                 if (record[j].name[0] > record[j+1].name[0])
                                                                                                         swap(record[j], record[j+1]);
                                                60
                                                61
62
63
                                                64
                                                                                          for (int i=0; i<5; i++)//display the full record of all 5 students
                                                65
66
67
                                                                                                  cout << record[i].name << "\t";</pre>
                                                68
                                                69
70
71
                                                                                                  cout << record[i].reg_no << "\t";
for(int j=0;j<3;j++)</pre>
                                                72
                                                                                                   cout << record[i].marks[i] << "\t":
                                       Logs & others
                                         📝 Code-Blocks X 💪 Search results X 📝 Cocc X 🔅 Build log X 🔶 Build messages X 📝 CppCheck/Vera++ X 📝 CppCheck/Vera++ x 📝 CppCheck/Vera+ messages X 📝 Cscope X 🙋 DoxyBlocks X 📮 Fortran info X 🐍 Closed files list X 💁 Thread search X
                                         File
                                                                Line Message
                                                                         === Build file: "no target" in "no project" (compiler: unknown) ===
C:\CodeBlocks\projects\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.cpp
                                                                                                                                                                                              C/C++ Windows (CR+LF) WINDOWS-1252 Line 1, Col 1, Pos 0 Insert
📕 20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.cpp - Code::Blocks 20.03
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 Q 4
 Management X Start here X 20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.cpp X
                                                                                                 cout << record[i].reg_no << "\t";
for(int j=0;j<3;j++)</pre>
                                               69
70
71
72
73
 ○ Workspace
                                                                                                  cout << record[i].marks[j] << "\t";</pre>
                                                74
75
76
77
78
                                                                                              cout<< endl:
                                                                   case 3://
                                                                                  char name[25];//a character data type for searching cout << "ENTER NAME OF STUDENT TO SEARCH RECORD:";
                                                79
80
81
82
83
                                                                                   cin >> name;
for (int i = 0; i < 5; i++)</pre>
                                                                                          if (!strcmp(record[i].name, name ) )//searching the name
                                                84
85
                                                86
87
88
89
90
                                                                                                  for(int j=0;j<3;j++)
                                                                                                                      ut << "\n\nenter THE MARKS " << j+1 << " :";//modify the marks of student
                                                92
93
94
95
96
97
                                              98
99
100
101
                                                                   case 4://if user press 4 it will exit the rogram
                                              102
                                                                           exit(0);
                                              103
                                                                    default:
                                              103
104
105
106
                                                                    }}
while (1);}
                                              107
                                              108
                                         👰 Code:Blocks X 👊 Search results X 📝 Cocc X 💢 Build log X 🥀 Build messages X 👰 CppCheck/Vera+- X 📝 CppCheck/Vera+- messages X 📝 Cocope X 👰 Debugger X 🥬 DonyBlocks X 👚 Fortrain info X 🐁 Closed files list X 💁 Thread search X
                                                                 Line Message === Build file: "no target" in "no project" (compiler: unknown) ===
C\CodeBlocks\projects\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.cpp
                                                                                                                                                                    C/C++ Windows (CR+LF) WINDOWS-1232 Line 1, Col 1, Pos 0 Insert Read/Write default
```

OUTPUT

ENTER THE MARKS OF STUDENT IN SUBJECT2 :65

🔳 "C:\CodeBlocks\projects\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.exe" - 🗇 X STUDENT RECORD STOUGHT RECORD

1.ENTER THE STUDINTS RECORD

2.DISPLAY THE RECORD

3.MODIFY THE RECORD ENTER DETAILS OF STUDENT NO:1 ENTER THE STUDENT NAME: ARSAL ENTER THE STUDENT REG NO: 20-SE-67 ENTER THE MARKS OF STUDENT IN SUBJECT1 :45 ENTER THE MARKS OF STUDENT IN SUBJECT2 :63 ENTER THE MARKS OF STUDENT IN SUBJECT3 :44 ENTER DETAILS OF STUDENT NO:2 ENTER THE STUDENT NAME: KIM ENTER THE STUDENT REG NO: 20-SE-22 ENTER THE MARKS OF STUDENT IN SUBJECT1 :47 ENTER THE MARKS OF STUDENT IN SUBJECT2 :65 ENTER THE MARKS OF STUDENT IN SUBJECT3 :23 ENTER DETAILS OF STUDENT NO:3 ENTER THE STUDENT REG NO: 20-SE-98 ENTER THE MARKS OF STUDENT IN SUBJECT1 :75 ENTER THE MARKS OF STUDENT IN SUBJECT2 :45 ENTER THE MARKS OF STUDENT IN SUBJECT3 :37 ENTER DETAILS OF STUDENT NO:4 ENTER THE STUDENT NAME: MAHEEN ENTER THE STUDENT REG NO: 20-SE-95 ENTER THE MARKS OF STUDENT IN SUBJECT1 :37

```
- 🗗 X
🔳 "C:\CodeBlocks\projects\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.exe"
         ENTER THE STUDENT NAME: LEEVINO
         ENTER THE STUDENT REG NO: 20-SE-54
ENTER THE MARKS OF STUDENT IN SUBJECT1 :48
ENTER THE MARKS OF STUDENT IN SUBJECT2 :62
ENTER THE MARKS OF STUDENT IN SUBJECT3 :40
         1.ENTER THE STUDENTS RECORD
         2.DISPLAY THE RECORD
3.MODIFY THE RECORD
4.EXIT
 TUDENT RECORD
        ARSAL 20-SE-67
IQRA 20-SE-98
KIM 20-SE-22
LEEVINO 20-SE-54
         MAHEEN 20-SE-95
         1.ENTER THE STUDENTS RECORD
2.DISPLAY THE RECORD
3.MODIFY THE RECORD
ENTER NAME OF STUDENT TO SEARCH RECORD:KIM
ENTER THE MARKS 1 :34
ENTER THE MARKS 2 :67
ENTER THE MARKS 3 :99
         1.ENTER THE STUDENTS RECORD
         3.MODIFY THE RECORD
4.EXIT
STUDENT RECORD
         ARSAL 20-SE-67
IQRA 20-SE-98
KIM 20-SE-22
LEEVINO 20-SE-54
MAHEEN 20-SE-95
                                                            44
37
99
40
```

```
- 🗇 X
🔳 "C:\CodeBlocks\projects\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2\20-SE-56 MUHAMMAD ARSALAN PF-LAB ASSIGNMENT-2.exe"
ENTER THE MARKS OF STUDENT IN SUBJECT3 :40
        1.ENTER THE STUDENTS RECORD
2.DISPLAY THE RECORD
         3.MODIFY THE RECORD
 TUDENT RECORD
        ARSAL 20-SE-67
IQRA 20-SE-98
KIM 20-SE-22
LEEVINO 20-SE-54
                                                        44
37
23
40
49
         MAHEEN 20-SE-95
         1.ENTER THE STUDENTS RECORD
2.DISPLAY THE RECORD
         3.MODIFY THE RECORD
ENTER NAME OF STUDENT TO SEARCH RECORD:KIM
ENTER THE MARKS 1 :34
ENTER THE MARKS 2 :67
ENTER THE MARKS 3 :99
        1.ENTER THE STUDENTS RECORD
         2.DISPLAY THE RECORD
         3.MODIFY THE RECORD
STUDENT RECORD
        ARSAL 20-SE-67
IQRA 20-SE-98
KIM 20-SE-22
LEEVINO 20-SE-54
                                                         44
37
99
40
         MAHEEN 20-SE-95
        1.ENTER THE STUDENTS RECORD
2.DISPLAY THE RECORD
         3.MODIFY THE RECORD
Process returned 0 (0x0) execution time : 390.951 s
Press any key to continue.
```