

University of engineering & technology Peshawar



COMPUTER PROGRAMMING -LAB

Lab report # 10

Spring 2020

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Section: B

Reg No: 19PWCSE1795

Semester: 2nd

“On my honor, as a student of University of Engineering and Technology Peshawar, I have neither given nor received unauthorized assistance on this academic work”

Student signature: _____

**Submitted to:
Eng: Abdullah**

Department Of Computer System Engineering

Lab 10: Structures

Objectives:

- To learn how to declare a C++ record (structure) data type.
- By the end of this activity, students will be able to apply the concept of structures to real world problems and make their own data types.

Task 1:

A phone number such as (091) 767-8900 can be thought of as having three parts: the area code (091), exchange (767) and number 8900. Write a program that uses structure to store these 3 parts of a phone number separately. Assume name of the structure is 'phone'. Create two objects of type 'phone', initialize one object and take the other one from the user. Display both numbers.

Sample Run:

Enter you Area code, exchange, and number: 091 767 8900

My number is (042) 867-4982

Your number is (091) 767-8900

Source code:

```
1  #include <iostream>
2  using namespace std;
3  struct phone
4  {
5      int areacode;
6      int exchange;
7      int number;
8  };
9  int main()
10 {
11     phone object1;
12     phone object2;
13
14     object2.areacode=42;
15     object2.exchange=867;
16     object2.number=4982;
17     phone main::object2
18     cout<<"Enter your area code, exchange and number : " ;
19     cin >> object1.areacode;
20     cin >> object1.exchange;
21     cin >> object1.number;
22
23     cout<<"My number is :(0"<<object2.areacode<<")"<<object2.exchange<<"-"<<object2.number<<endl;
24     cout<<"Your number is :(0"<<object1.areacode<<")"<<object1.exchange<<"-"<<object1.number;
25
26     return 0;
27 }
```

Compilation:

```
Enter your area code, exchange and number : 091
767
8900
My number is :(042)867-4982
Your number is :(091)767-8900
Process returned 0 (0x0)   execution time : 14.288 s
Press any key to continue.
```

Task 2:

Write a C++ Program where you create a movie database using structures. i.e the struct must have two members “title” and “year”. For test run add 3 movies into the database and then display the movie title and names.

```
.cpp x
1  #include <iostream>
2  using namespace std;
3  struct movie_database
4  {
5      string title[3];
6      int year[3];
7  };
8  int main()
9  {
10     movie_database object;
11     object.title;
12     object.year;
13     for (int i=0; i<3; i++)
14     {
15         cout << "Enter movie "<<i+1<<" title : " ;
16         cin >> object.title[i];
17
18         cout << "Enter movie "<<i+1<<" year : ";
19         cin >>object.year[i];
20     }
21     cout <<"*****"<<endl;
22     for(int j=0; j<3; j++)
23     {
24         cout << "Movie "<<j+1<<" title is : " << object.title[j]<<endl;
25         cout << "Movie "<<j+1<<" year is : " << object.year[j]<<endl;
26     }
27     return 0;
28 }
```

Compilation:

```

Enter movie 1 title :ABC
Enter movie 1 year : 2018
Enter movie 2 title :LMN
Enter movie 2 year : 2019
Enter movie 3 title :XYZ
Enter movie 3 year : 2020
*****
Movie 1 title is :ABC
Movie 1 year is : 2018
Movie 2 title is :LMN
Movie 2 year is : 2019
Movie 3 title is :XYZ
Movie 3 year is : 2020

```

Task 3:

A point on a two dimensional space has two numbers: an 'X' coordinate and a 'Y' coordinate such as (4, 5). Write a program that uses a structure called 'point' to model a point and draw a rectangle of '*' based on the entered height and width of the rectangle.

Sample Run:

Enter the point coordinates: (x, y)

3 2

Enter width of the rectangle: 3

Enter Height of the rectangle: 2

```

*   *   *
*   *   *

```

Source code:

```

1  #include <iostream>
2  using namespace std;
3  struct point
4  {
5      int width, height;
6  };
7  int main()
8  {
9      point object;
10     cout << "enter width : " ;
11     cin >> object.width;
12     cout << "enter hight : " ;
13     cin >> object.height;
14
15     cout << "* * *" << endl;
16     cout << "* * *" << endl;
17     return 0;
18 }

```

Compilation:

```

enter width : 3
enter hight : 2
* * *
* * *

Process returned 0

```





Task 4:

. Write a program to develop student information system. This system should be able to take the student's credentials, like name, reg no and semester no, as input and store them in a structure object Student_t. The system should be capable of storing the information of multiple students. And it should be capable of displaying the student's information, when asked to do so, via reg no.

Source code:

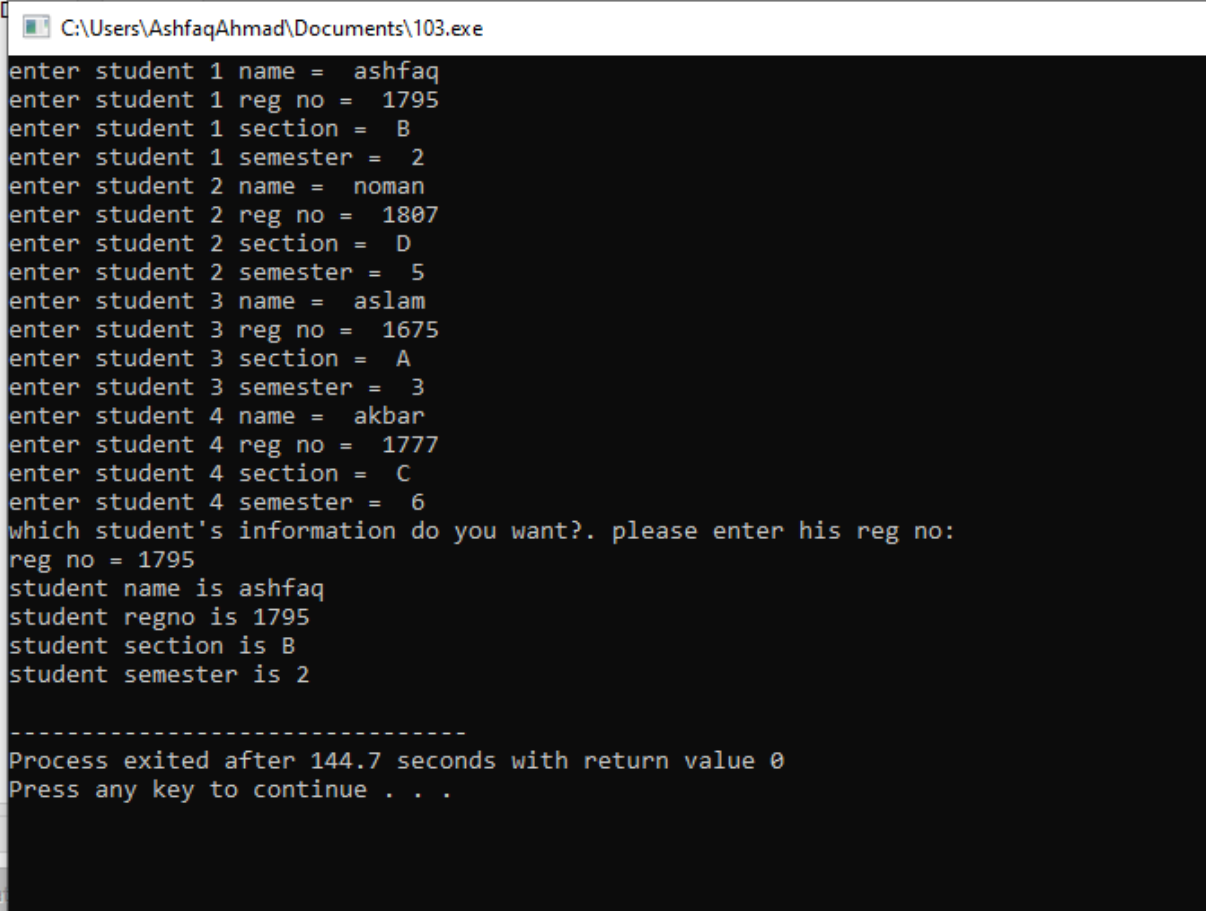
103.cpp

```
1  #include <iostream>
2  using namespace std;
3  struct student
4  {
5      string name[4];
6      int regno[4];
7      string section[4];
8      int semester[4];
9  };
10 int main()
11 {
12     student student_t;
13     for (int i=0; i<4; i++)
14     {
15         cout<<"enter student "<<i+1<<" name = ";
16         cin>>student_t.name[i];
17         cout<<"enter student "<<i+1<<" reg no = ";
18         cin>>student_t.regno[i];
19         cout<<"enter student "<<i+1<<" section = ";
20         cin>>student_t.section[i];
21         cout<<"enter student "<<i+1<<" semester = ";
22         cin>>student_t.semester[i];
23     }
24     cout<<"which student's information do you want?. please enter his reg no:\n";
25     cout<<"reg no = ";
26     cin>>student_t.regno[1];
27     for(int i=0; i<1; i++)
28     {
29         if(student_t.regno[i]==student_t.regno[1])
30         {
31             cout<<"student name is "<<student_t.name[i]<<endl;
32             cout<<"student regno is "<<student_t.regno[i]<<endl;
33             cout<<"student section is "<<student_t.section[i]<<endl;
34             cout<<"student semester is "<<student_t.semester[i]<<endl;
35         }
36     }
37     else
38     cout<<"you enter wrong reg no!";
39
40
41
42     return 0;
43 }
```

es  Compile Log  Debug  Find Results  Close

```
- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\AshfaqAhmad\Documents\103.exe
- Output Size: 1.83398628234863 MiB
- Compilation Time: 0.84s
```


Compilation:



```
C:\Users\AshfaqAhmad\Documents\103.exe
enter student 1 name = ashfaq
enter student 1 reg no = 1795
enter student 1 section = B
enter student 1 semester = 2
enter student 2 name = noman
enter student 2 reg no = 1807
enter student 2 section = D
enter student 2 semester = 5
enter student 3 name = aslam
enter student 3 reg no = 1675
enter student 3 section = A
enter student 3 semester = 3
enter student 4 name = akbar
enter student 4 reg no = 1777
enter student 4 section = C
enter student 4 semester = 6
which student's information do you want?. please enter his reg no:
reg no = 1795
student name is ashfaq
student regno is 1795
student section is B
student semester is 2

-----
Process exited after 144.7 seconds with return value 0
Press any key to continue . . .
```

er paths

- Output Filename: C:\Users\AshfaqAhmad\Documents\103.exe
- Output Size: 1.83398628234863 MiB
- Compilation Time: 0.81s

THE END