

Object Oriented Programming

Lab Report

Lab09



Group Members Name & Reg #:	<u>Muhammad Haris Irfan</u> (FA18-BCE-090)
Class	Object Oriented Programming CSC241 (BCE-4B)
Instructor's Name	Maam Amber Madeeha Zeb

In Lab Tasks

5.1 Question 1:

Code the example given above with mentioning some message indicating the class construction and destruction in the constructors and destructors of each class and check the calling of constructors and destructors.

Solution:

The code is given below,

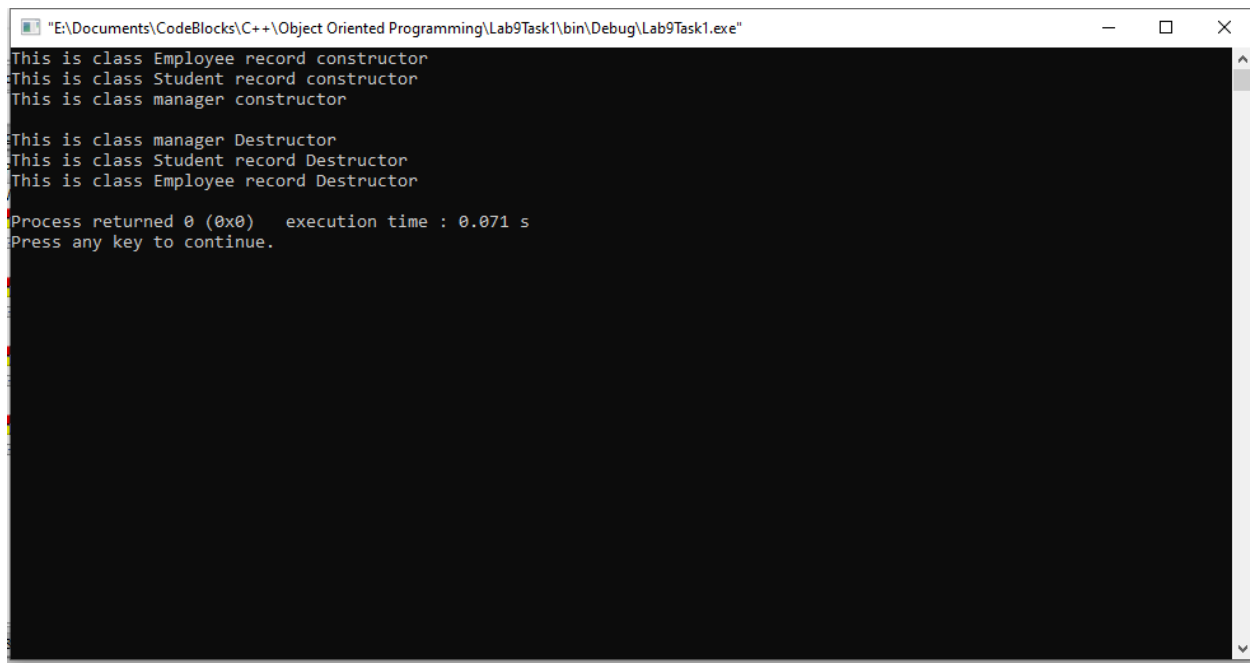
```
1  #include<iostream>
2  #include<string>
3  using namespace std;
4  class studentRecord
5  {
6  private:
7      string degree;
8  public:
9      studentRecord ()
10     {
11         cout<<"This is class Student record constructor"<<endl;
12     }
13     ~studentRecord ()
14     {
15         cout<<"This is class Student record Destructor"<<endl;
16     }
17     void getdata()
18     {
19         cout<<"Enter Degree: ";
20         cin>>degree;
21     }
22 };
23 class employeeRecord
24 {
25 private:
26     int emp_id;
27     double salary;
28 public:
29     employeeRecord ()
30     {
31         cout<<"This is class Employee record constructor"<<endl;
32     }
33     ~employeeRecord ()
34     {
35         cout<<"This is class Employee record Destructor"<<endl;
36     }
37     void getdata()
38     {
39         cout<<"Enter Employee ID: ";
40         cin>>emp_id;
```

```

41         cout<<"Enter Salary: ";
42         cin>>salary;
43     }
44 };
45 class manager
46 { private:
47     string title;
48     double dues;
49     employeeRecord emp;
50     studentRecord stu; public:
51
52     manager()
53     {
54         cout<<"This is class manager constructor"<<endl;
55     }
56     ~manager()
57     {
58         cout<<endl<<"This is class manager Destructor"<<endl;
59     }
60     void getdata()
61     {
62         emp.getdata();
63         cout<<"Enter Title: ";
64         cin>>title;
65         cout<<"Enter Dues: ";
66         cin>>dues;
67         stu.getdata();
68     }
69 };
70 int main()
71 {
72     manager m1;
73
74     return (0);
75 }

```

Console Output is shown below.



```

"E:\Documents\CodeBlocks\C++\Object Oriented Programming\Lab9Task1\bin\Debug\Lab9Task1.exe"
This is class Employee record constructor
This is class Student record constructor
This is class manager constructor

This is class manager Destructor
This is class Student record Destructor
This is class Employee record Destructor

Process returned 0 (0x0)   execution time : 0.071 s
Press any key to continue.

```

5.2 Question 2:

Create an Address class, which contains street#, house#, city and code (all of type char*). Create another class Person that contains an address of type Address. Give appropriate get and set functions for both classes. Test class person in main.

Solution:

The code is given below,

```
1  #include <iostream>
2
3  using namespace std;
4
5  class Address
6  {
7  protected:
8      int street;
9      int house;
10     string city;
11     int citycode;
12
13 public:
14     void getadd()
15     {
16         cout<<"Enter Street number"<<endl;
17         cin>>street;
18         cout<<"Enter House number"<<endl;
19         cin>>house;
20         cout<<"Enter City"<<endl;
21         cin>>city;
22         cout<<"Enter City Code"<<endl;
23         cin>>citycode;
24     }
25
26     void showadd()
27     {
28         cout<<endl<<"Street number:"<<street<<endl;
29         cout<<"House number:"<<house<<endl;
30
31         cout<<"City:"<<city<<endl;
32         cout<<"City Code:"<<citycode<<endl;
33     }
34 };
35
36 class person
37 {
38 protected:
39     Address ad;
40
41 public:
42     void getadd()
43     {
44         ad.getadd();
45     }
46
47     void showadd()
48     {
```

```
50         ad.showadd();
51     }
52 };
53
54
55
56
57 int main()
58 {
59     person p;
60     p.getadd();
61     p.showadd();
62
63     return 0;
64 }
```

Console Output is shown below.

```
"E:\Documents\CodeBlocks\C++\Object Oriented Programming\Lab9Task2\bin\Debug\Lab9Task2.exe"
Enter Street number
1
Enter House number
2
Enter City
Islamabad
Enter City Code
051

Street number:1
House number:2
City:Islamabad
City Code:51

Process returned 0 (0x0)   execution time : 6.519 s
Press any key to continue.
```

5.3 Question 3:

Write the program, which has two classes one, is Date having members (day, month, year) and the other class is called Employee. The employee has Date class as member as each employee has Date of joining, Date of Birth etc.

- a. Determine if an employee joined the organization within last five years if the current year is 2012.
- b. Determine if an Employee has age less than 40 years?

Solution:

The code is given below,

```
1  #include <iostream>
2
3  using namespace std;
4
5  class Date
6  {
7
8
9
10
11 public:
12     int dayA, monthA, yearA;
13     int dayJ, monthJ, yearJ;
14
15
16     void getJoiningdate()
17     {
18         cout<<"Enter Joining Day?"<<endl;
19         cin>>dayJ;
20         cout<<"Enter Joining Month?"<<endl;
21         cin>>monthJ;
22         cout<<"Enter Joining Year?"<<endl;
23         cin>>yearJ;
24     }
25     void getbirthdate()
26     {
27         cout<<"Enter Birth Day?"<<endl;
28         cin>>dayA;
29         cout<<"Enter Birth Month?"<<endl;
30         cin>>monthA;
31         cout<<"Enter Birth Year?"<<endl;
32         cin>>yearA;
33     }
34
35
36
37 };
38
39 class Employee
```

```

40 {
41     protected:
42         Date d1;
43     public:
44         void getdata()
45         {
46             d1.getbirthdate();
47             d1.getJoiningdate();
48         }
49
50         void result()
51         {
52             if((2012-d1.yearJ) <=5)
53                 cout<<"The EMPLOYEE joined the organization in last 5 years."<<endl;
54             if((2012-d1.yearJ) >5)
55                 cout<<"The EMPLOYEE joined the organization more then 5 years ago."<<endl;
56             if((2012-d1.yearA) <40)
57                 cout<<"The EMPLOYEE has age less then 40 years."<<endl;
58             if((2012-d1.yearA) >=40)
59                 cout<<"The EMPLOYEE age is not less then 40 years."<<endl;
60         }
61
62     };
63 };
64 int main()
65 {
66     Employee e1;
67     e1.getdata();
68     e1.result();
69
70     return 0;
71 }

```

Console Output is shown below.

```

E:\Documents\CodeBlocks\C++\Object Oriented Programming\Lab9Task3\bin\Debug\Lab9Task3.exe
Enter Birth Day?
1
Enter Birth Month?
2
Enter Birth Year?
1998
Enter Joining Day?
2
Enter Joining Month?
12
Enter Joining Year?
2009
The EMPLOYEE joined the organization in last 5 years.
The EMPLOYEE has age less then 40 years.
Process returned 0 (0x0)   execution time : 16.456 s
Press any key to continue.

```

POST LAB

6.1 Question 4:

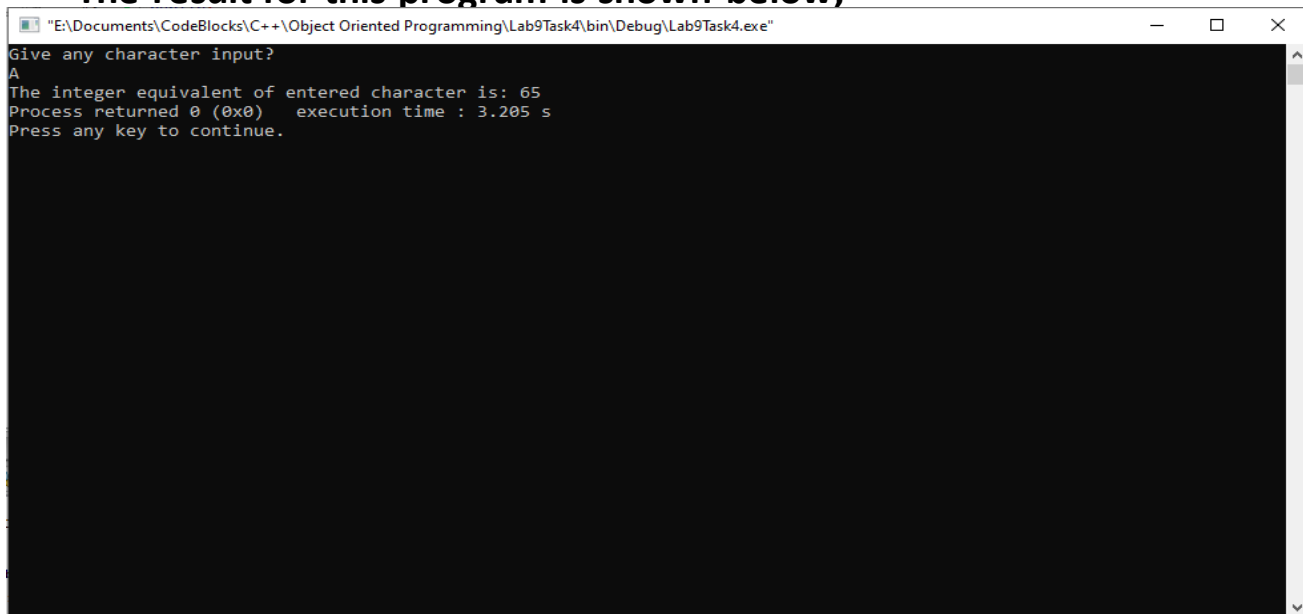
Read digits as Characters input and convert to equivalent numeral values.

Solution:

I am attaching my code below,

```
1  #include <iostream>
2
3  using namespace std;
4
5  int main()
6  {
7      char name;
8      int x;
9      cout << "Give any character input?" << endl;
10     cin >> name;
11
12     x=name;
13
14     cout<<"The integer equivalent of entered character is: "<<x;
15
16
17
18     return 0;
19 }
```

The result for this program is shown below,

A screenshot of a Windows command prompt window titled "E:\Documents\CodeBlocks\C++\Object Oriented Programming\Lab9Task4\bin\Debug\Lab9Task4.exe". The window shows the execution of a C++ program. The prompt "Give any character input?" is displayed, followed by the user input "A". The program then outputs "The integer equivalent of entered character is: 65". Below this, it shows "Process returned 0 (0x0) execution time : 3.205 s" and "Press any key to continue.". The window has standard Windows window controls (minimize, maximize, close) in the top right corner.

_____THE END_____
