G. H. Raisoni College Of Engineering And Management, Wagholi Pune Assignment no :- 5 2021- 2022			
Department	CE [SUMMER 2022 (Online)]		
Term / Section	III/B	Date Of **submission**	04-10-2021
Subject Name /Code	Object Oriented Programming/ UTIL201/UITP201		
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Assignment No. 5

Aim :→ Create Stud class to display student information using constructor and destructor. (Default Constructor, Multiple constructor, copy constructor. overloaded constructor)

Theory :→

▶ C++ Constructor

In C++, constructor is a special method which is invoked automatically at the time of object creation. It is used to initialize the data members of new object generally. The constructor in C++ has the same name as class or structure.

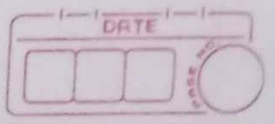
There can be two types of constructors in C++

- Default constructor.
- Parameterized constructor.

▶ C++ Default Constructor

A constructor which has no argument is known as default constructor. It is invoked at the time of creating Object.

Ex of Default constructor



EX
```
#include <iostream>
using namespace std;
class Employee
{
 public:
   Employee ()
   {
     cout << " Default constructor Invoked" <<endl;
   }
};
int main (void)
{
  Employee e1;  //creating an object of employee
  Employee e2;
  return 0
}
```

output:
```
Default constructor invoked
Default constructor invoked
```

c++ parameterized constructor

A constructor which has parameterized constructor. It is used to provide different values to distinct objects.

c++ destructor

A destructor works opposite to constructor: it destructs the objects of class. It can be defined only once in a class.

Like constructors, it is invoked automatically

A destructor is defined like constructor.
It must have same name as class.
But it is prefixed with a tilde sign (~).

Ex
```
#include <iostream>
using namespace std;
class Employee {
public:
 int id ; // data member
string name // data member
float salary;
Employee (int i, string n, float s)
{
 id =i;
name =n;
salary =s;
}
void display()
{
cout<<id<<" "<< name <<" "<<salary<<endl;
}
};
int main (void) {
Employee e1=Employee (101,"sonoo" 8900);
Employee e2=Employee(102,"Nakul" 5900);
e1.display();
e2.display();
 return 0; }
```

Output:
```
101  Sonoo  8900
102  NAKUL  5900
```

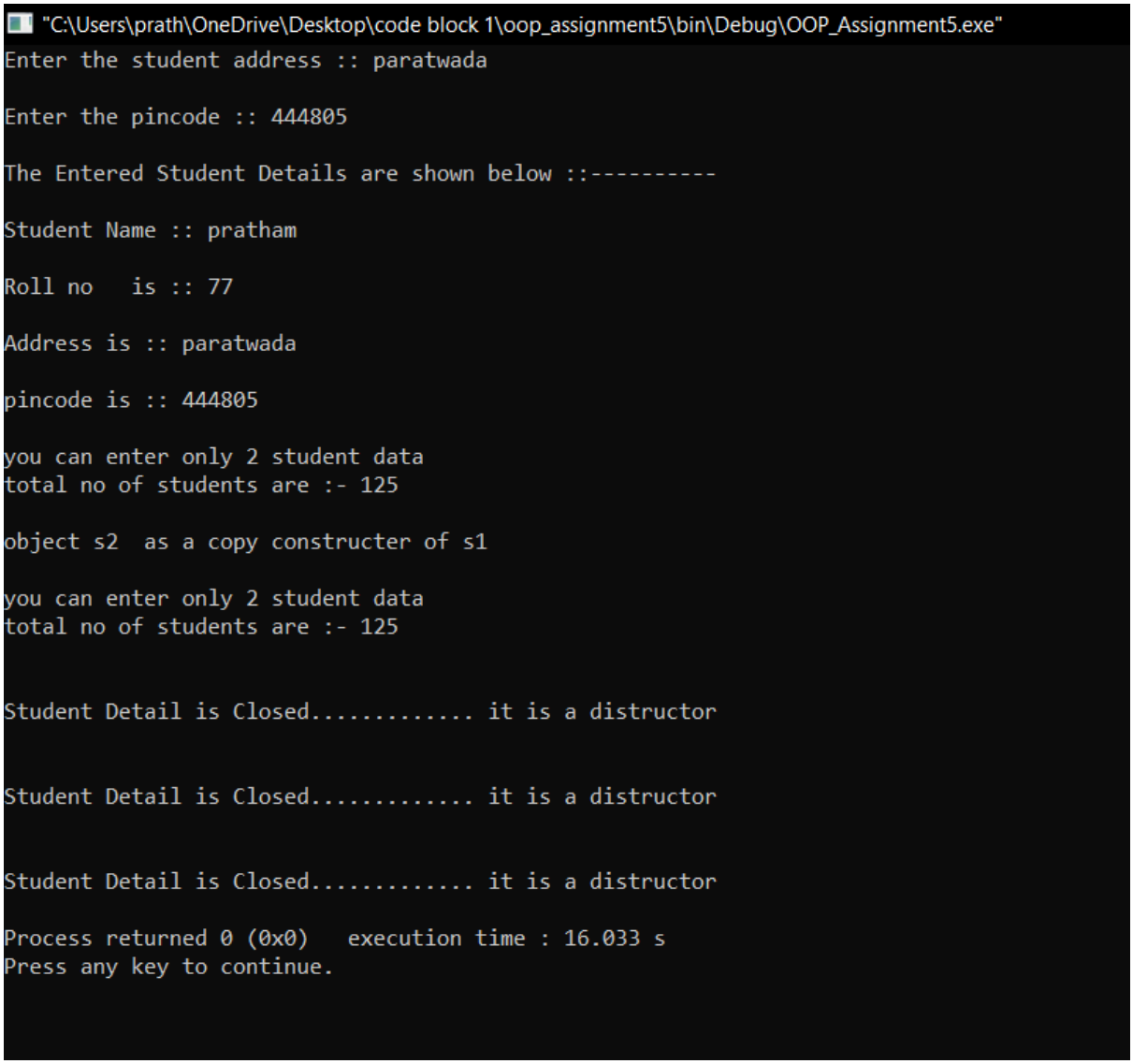
Program code

```
#include<iostream>
using namespace std;

class stud
{           int totalstd,code;
            private:
               char name[20],add[20];
                  int pincode;

            public:
            int rolln;
               stud ()     // hear i have used defult constructor
               {
                 cout<<"\ndefult constructor for  Student Details"<<endl;
               };
             stud (int i);
             stud (float j,float k);
             stud (const stud&s1);     // hear i am using this to copy valus fo s1 which is stud (float j,float
k);
             ~stud();
             void read();
             void disp();      // i will use it for  displaying the student information
             void display();    // i will use this display function for  copy constructor
};
 stud :: stud (int i)            //hear i am using parameterized constructor
               {
                 cout<<"you can enter only "<<i<<" student data\n";
               };
stud :: stud (float j,float k)
```

```
{
   code = j;
   totalstd = k;
}
void stud :: read()
{
      cout<<"\nEnter the student Name :: ";
      cin>>name;
      cout<<"\nEnter the student roll no :: ";
      cin>>rolln;
      cout<<"\nEnter the student address :: ";
      cin>>add;
      cout<<"\nEnter the pincode :: ";
      cin>>pincode
      ;
}
stud :: stud (const stud&s1)     // hear i am using copy constructor which is s2
{
    code=s1.code;
    totalstd=s1.totalstd;
}
void stud :: display()
{
   cout<<"you can enter only "<<code<<" student data\n";
   cout<<"total no of students are :- "<<totalstd<<"\n";
}
void stud :: disp()
{
   cout<<"\nThe Entered Student Details are shown below ::---------- \n";
      cout<<"\nStudent Name :: "<<name<<endl;
      cout<<"\nRoll no   is :: "<<rolln<<endl;
```

```
        cout<<"\nAddress is :: "<<add<<endl;
        cout<<"\npincode is :: "<<pincode<<"\n\n";
}
 stud :: ~stud()
 {
        cout<<"\n\nStudent Detail is Closed..... it is a distructor\n";
 }

int main(void)
{
  cout<<"--------------------------------------------------------------------------------------------";
  cout<<"\nSCOB77_PRATHAM PITTY_OOP_Assignment no
5\npratham.pitty.cs@ghrcem.raisoni.net\n";
  cout<<"--------------------------------------------------------------------------------------------\n";
         stud();
      cout<<"\nobject s as a defult constructer if we use the stud() only without any argument\n\n";
        stud s = stud(1);
       cout<<"\nobject s hear is paramaterized constructor\n\n";
    s.read ();
    s.disp ();
    stud s1(2,125);
    s1.display ();
    cout<<"\nobject s2  as a copy constructer of s1\n\n";
    stud s2(s1);
    s2.display ();
    //s.~stud();
    return 0;
}
```


"C:\Users\prath\OneDrive\Desktop\code block 1\oop_assignment5\bin\Debug\OOP_Assignment5.exe"
SCOB77_PRATHAM PITTY_OOP_Assignment no 5
pratham.pitty.cs@ghrcem.raisoni.net
defult constructor for Student Details
Student Detail is Closed..... it is a distructor
object s as a defult constructer if we use the stud() only without any argument
you can enter only 1 student data
object s hear is paramaterized constructor
Enter the student Name :: pratham
Enter the student roll no :: 77
Enter the student address :: paratwada
Enter the pincode :: 444805
The Entered Student Details are shown below ::----------
Student Name :: pratham
Roll no   is :: 77
Address is :: paratwada
pincode is :: 444805
you can enter only 2 student data
total no of students are :- 125
object s2 as a copy constructer of s1
you can enter only 2 student data
total no of students are :- 125
Student Detail is Closed..... it is a distructor
Student Detail is Closed..... it is a distructor


"C:\Users\prath\OneDrive\Desktop\code block 1\oop_assignment5\bin\Debug\OOP_Assignment5.exe"
Enter the student address :: paratwada
Enter the pincode :: 444805
The Entered Student Details are shown below ::----------
Student Name :: pratham
Roll no is :: 77
Address is :: paratwada
pincode is :: 444805
you can enter only 2 student data
total no of students are :- 125
object s2 as a copy constructer of s1
you can enter only 2 student data
total no of students are :- 125
Student Detail is Closed..... it is a distructor
Student Detail is Closed..... it is a distructor
Student Detail is Closed..... it is a distructor
Process returned 0 (0x0) execution time : 16.033 s
Press any key to continue.