Assignment Title:	Develop an object oriented program in C++ to create a database of student information system containing the following information: Name, Roll number, Class, division, Date of Birth, Blood group, Contact address, telephone number, driving license no. and other. Construct the database with suitable member functions for initializing and destroying the data viz constructor, default constructor, Copy constructor, destructor, static member functions, friend class, this pointer, inline code and dynamic memory allocation operators-new and delete.
Assignment No.:	02
Student Name:	Chaudhari Om Devidas
Year & DIV.:	SE A
Batch:	C
Roll No:	45

Program Code:

```
#include<iostream>
#include<iomanip>
#include<cstring>
#include<cstdlib>

using namespace std;

class personal
{
    char bg[3],name[20],dob[10];
    float height,weight;
    int insu_pno;
    char cadd[20];
    char ph_no[12];
    int dlno;
    static int cnt;
    public:
    friend class derived;
    personal()
```

```cpp
        {
                strcpy(name,"Pratyush");
                strcpy(dob,"25oct90");
                strcpy(bg,"o+");
                height=5.4;
                weight=47.5;
                insu_pno=123;
                strcpy(cadd,"Nashik");
                strcpy(ph_no,"9087562413");
                dlno=234;
        }
        personal(char name[],char dob[],char bg[],float height,float
weight,int insu_pno,char cadd[],char ph_no[],int dlno)
        {
                strcpy(this->name,name);
                strcpy(this->dob,dob);
                strcpy(this->bg,bg);
                this->height=height;
                this->weight=weight;
                this->insu_pno=insu_pno;
                strcpy(this->cadd,cadd);
                strcpy(this->ph_no,ph_no);
                this->dlno=dlno;
        }
        personal(personal &p)
        {
                strcpy(p.name,name);
                strcpy(p.dob,dob);
                strcpy(p.bg,bg);
                p.height=height;
                p.weight=weight;
                p.insu_pno=insu_pno;
                strcpy(p.cadd,cadd);
                strcpy(p.ph_no,ph_no);
                p.dlno=dlno;
        }
        static void showcount()
        {
                cnt++;
                cout<<"\nCount is : "<<cnt;
        }
        ~personal()
        {
                cout<<"\nObjects is destroyed.."<<endl;
        }
};
class  derived
{
        public:
                void accept(personal &p)
                {
```

```cpp
                    cout<<"Enter the name:";
                    cin>>p.name;
                    cout<<"Enter the date of birth:";
                    cin>>p.dob;
                    cout<<"Enter the blod group:";
                    cin>>p.bg;
                    cout<<"Enter height:";
                    cin>>p.height;
                    cout<<"Enter the weight:";
                    cin>>p.weight;
                    cout<<"Enter the insurance policy no:";
                    cin>>p.insu_pno;
                    cout<<"Enter the contact address:";
                    cin>>p.cadd;
                    cout<<"Enter the phone no:";
                    cin>>p.ph_no;
                    cout<<"Enter the driving lisence no:";
                    cin>>p.dlno;
            }
            inline void display(personal &p)
            {
                    cout<<endl;
                    cout<<setw(10)<<p.name;
                    cout<<setw(10)<<p.dob;
                    cout<<setw(4)<<p.bg;
                    cout<<setw(7)<<p.height;
                    cout<<setw(7)<<p.weight;
                    cout<<setw(5)<<p.insu_pno;
                    cout<<setw(10)<<p.cadd;
                    cout<<setw(12)<<p.ph_no;
                    cout<<setw(5)<<p.dlno;
            }
};
int personal::cnt;

int main()
{

    personal *d1;
    derived d;
    int i,n;
   cout<<"\nConstructor values...\n";
    cout<<setw(10)<<"NAME";
    cout<<setw(10)<<"DATE";
    cout<<setw(3)<<"BG";
    cout<<setw(7)<<"Height";
    cout<<setw(7)<<"weight";
    cout<<setw(5)<<"IPN";
    cout<<setw(10)<<"ADDRESS";
    cout<<setw(12)<<"PH NO";
    cout<<setw(5)<<"DLN";
```

```
    personal p("Gauri","24oct93","o-
",5.5,50,345,"Dawarka","9430876123",789);
    d.display(p);
    personal::showcount();

    personal p1;
    d.display(p1);
    personal::showcount();

    cout<<"\nEnter how many records u want to insert:";
    cin>>n;
    d1=new personal[n];
    for(i=0;i<n;i++)
      d.accept(d1[i]);

    cout<<endl;
    cout<<setw(10)<<"NAME";
    cout<<setw(10)<<"DATE";
    cout<<setw(3)<<"BG";
    cout<<setw(7)<<"Height";
    cout<<setw(7)<<"weight";
    cout<<setw(5)<<"IPN";
    cout<<setw(10)<<"ADDRESS";
    cout<<setw(12)<<"PH NO";
    cout<<setw(5)<<"DLN";
    for(i=0;i<n;i++)
    {
      personal::showcount();
      d.display(d1[i]);
    }
        return 0;
}
```

Program Output:

Constructor values...
```
    NAME    DATE BG Height weight  IPN   ADDRESS     PH NO  DLN
  Gauri  24oct93  o-   5.5    50  345  Dawarka 9430876123 789
```
Count is : 1
```
 Pratyush  25oct90  o+   5.4  47.5  123   Nashik  9087562413 234
```
Count is : 2
Enter how many records u want to insert:1
Enter the name:Rajesh
Enter the date of birth:11feb03
Enter the blod group:o+

Enter height:5.9
Enter the weight:65
Enter the insurance policy no:101
Enter the contact address:DubaiPhata
Enter the phone no:0123456789
Enter the driving lisence no:102

```
   NAME     DATE BG Height weight  IPN  ADDRESS      PH NO  DLN
Count is : 3
  Rajesh   11feb03  o+   5.9    65 101DubaiPhata  0123456789  102
Objects is destroyed..


Objects is destroyed..
```