Phase -6

Practical -1

Aim:-1.Create an Add to Cart system for only Grocery Items Such as% Breads, Wheat, Milk, Soup, Frozen Foods, Cheese. Customers can buy these items in any quantity he/she wants. A customer can add/update/delete any item in any quantity whenever he/she wants. Give customers a final bill including all types of TAX on total price. Identify if a customer can pay the bill or not with his/her available wallet amount.

Program:-

Output:

Practical - 2

Aim-2: A Businessman was bankrupted in a Scan with a minimal amount left in a bank of ₹. 18,000. After some months of hard work, he earned an external amount of ₹. 1,20,000. Now He might go to the bank and deposit or withdraw some money as he wants. Prepare a C++ solution for this Scenario with all required validations and criterias.

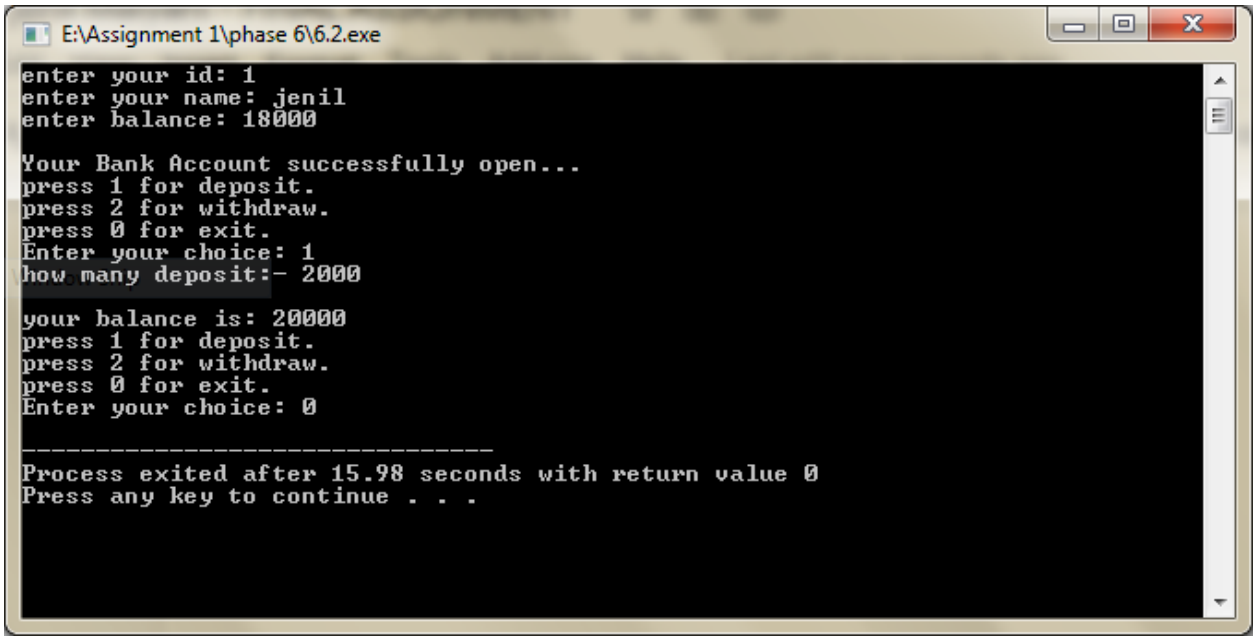
Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Bank
{
   char name[100];
   int id;
   int balance;
   int n;
   int m;
   int w;
   public:
int setdata()
{
                cout<<"enter your id: ";
                cin>>this->id;
                cout<<"enter your name: ";
                cin>>this->name;
                cout<<"enter balance: ";
                cin>>this->balance;

        if(balance>=18000)
        {
                        cout<<endl<<"Your Bank Account successfully open..."<<endl;

                for(int i=0; i<=1;i--)
```

```
{
        cout<<"press 1 for deposit."<<endl
    <<"press 2 for withdraw."<<endl
    <<"press 0 for exit."<<endl;

    cout<<"Enter your choice: ";
    cin>>this->n;

    switch(n)
    {
        case 1:
            cout<<"how many deposit:- ";
            cin>>this->m;
            this->balance += m;
            cout<<endl<<"your balance is: "<<this->balance<<endl;
            break;

        case 2:
         cout<<"how many withdraw: ";
            cin>>this->w;
            if(balance>=w)
            {
                this->balance -= w;
                cout<<endl<<"your balance is:
"<<this->balance<<endl;
            }
            else
            {
                cout<<endl<<"no balance..."<<endl;
            }
            break;

        case 0:
         return 0;
            break;

        default:
           cout<<endl<<"invalid choice..."<<endl<<endl;

    }
```

```
                }

        }
                else
                {
                        cout<<"minimum balance rs:-25000 required..."<<endl;
                }
}
};

int main()
{
        Bank b1;
        b1.setdata();

        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.2.exe
enter your id: 1
enter your name: jenil
enter balance: 18000
Your Bank Account successfully open...
press 1 for deposit.
press 2 for withdraw.
press 0 for exit.
Enter your choice: 1
how many deposit:- 2000
your balance is: 20000
press 1 for deposit.
press 2 for withdraw.
press 0 for exit.
Enter your choice: 0

Process exited after 15.98 seconds with return value 0
Press any key to continue . . .

Practical - 3

Aim-3: An action is helding at Arizona for selling an old haunted house. For the reason, this is a haunted house, only three gigantic companies took a part in this Auction.setdata() sell this haunted house to the highest bidder with count of three. use c++ with all required criteria to build this type of auction system.

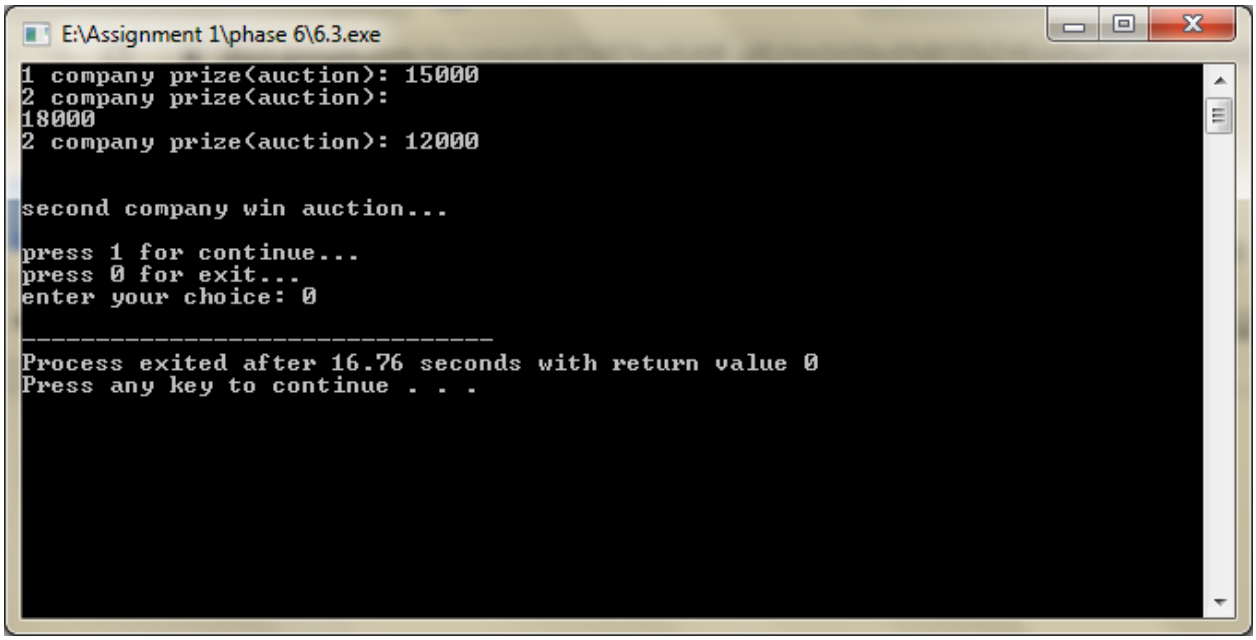
Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class compney
{
   int a,b,c,n;
   public:
   int setdata()
   {
         for(int i=0;i<=1;i--)
         {
                  cout<<"1 company prize(auction): ";
                  cin>>a;
                  cout<<"2 company prize(auction): ";
                  cin>>b;
                  cout<<"2 company prize(auction): ";
                  cin>>c;

                           if(a>b)
                           {
                                    if(a>c)
                                    {
                                             cout<<endl<<endl<<"first company win
auction..."<<endl<<endl;
                                    }
                                    else
```

```
                        {
                                cout<<endl<<endl<<"third company win
auction..."<<endl<<endl;
                        }
                }
                else
                {
                        if(b>c)
                        {
                                cout<<endl<<endl<<"second company win
auction..."<<endl<<endl;
                        }
                        else
                        {
                                cout<<endl<<endl<<"third company win
auction..."<<endl<<endl;
                        }
                }

                cout<<"press 1 for continue..."<<endl
                   <<"press 0 for exit..."<<endl;

                cout<<"enter your choice: ";
                cin>>n;

                switch(n)
                {
                        case 1:
                                  break;

                        case 0:
                              return 0;
                                   break;

                        default:
                           cout<<endl<<"invalid choice..."<<endl<<endl;

                }

        }
```

```
        }
};
int main()
{
        compney c1;
        c1.setdata();
        return 0;
}
```

Output:



Practical - 4

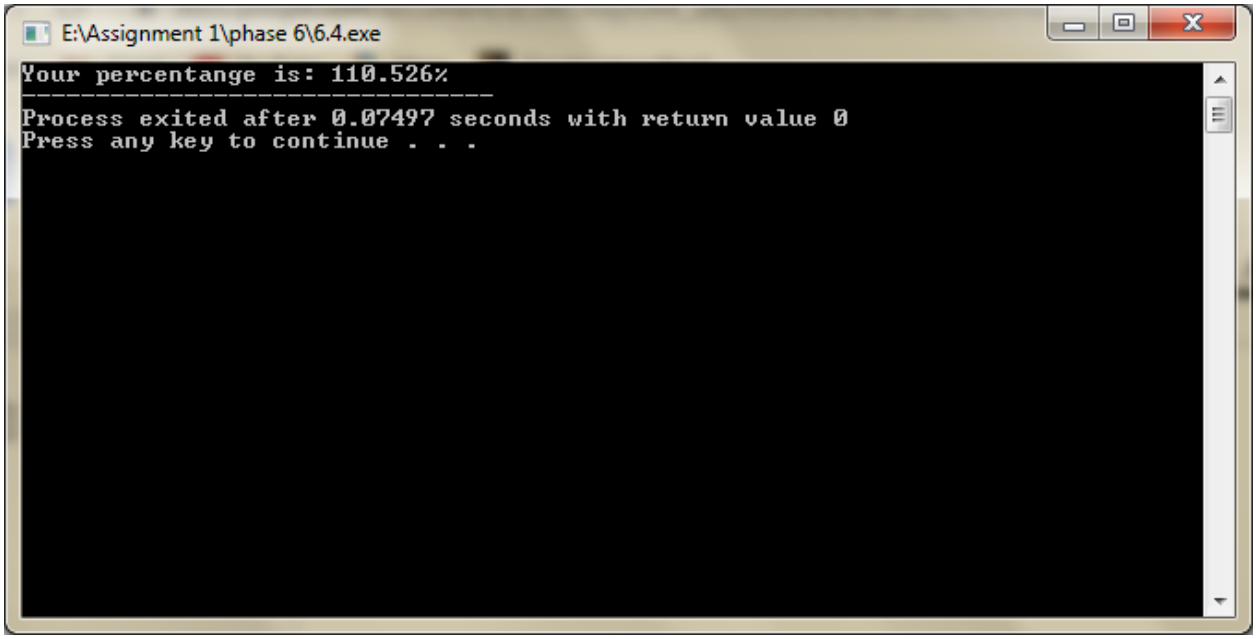
Aim-4: Build a C++ system which predict a total profit of a Cashew Company in Goa. If this company sells 1,23,500 piece of cashews in 1 month, then it generates total of 78,000 in a month. Help this company by producing 10X more cashews in months and display total revenue with increment percentage.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Company
{
   double i = 123500;
   int w = 78000;
   double ans;
   public:

        void setdata()
        {

                ans=i*(10)/3;
                ans=ans*(w)/i;
        }
        void getdata()
        {
                ans=(ans-i)*100/i;
                cout<<"Your percentange is: "<<ans<<"%";
        }
};
int main()
{
        Company c1;
        c1.setdata();
```

```
        c1.getdata();

        return 0;
}
```

Output:



Practical - 5

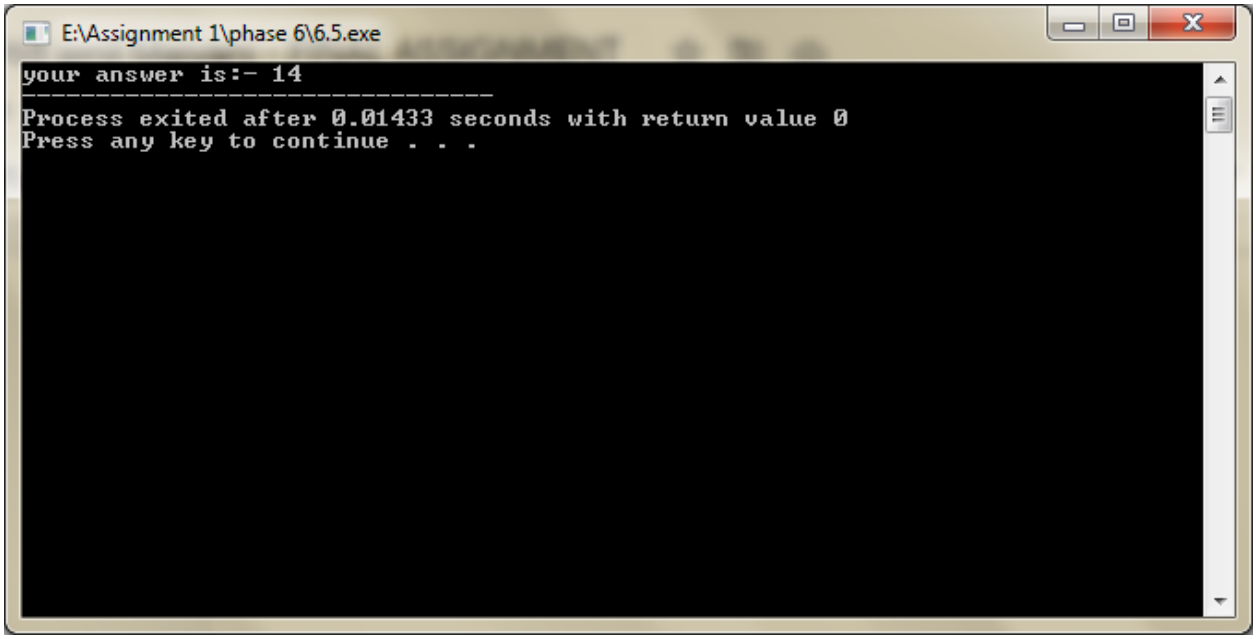
Aim-5:The two short sides of a right triangle are 6 cm and 13 cm. Find the length of the third side using Pythagoras Theorem with help of C++.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Pyth
{
    int a=6,b=13,d,temp=0;
    float c;
    public:

          void setdata()
          {
                a =a*a;
      b =b*b;
                d=a+b;
                c = d/ 2;

   while(c!=temp)
   {
      temp = c;
      c = (d/temp + temp)/2;
   }
   cout<<"your answer is:- "<<c;

          }


};
int main()
{
         Pyth p1;
```

```
        p1.setdata();


        return 0;
}
```

Output:



Practical - 6

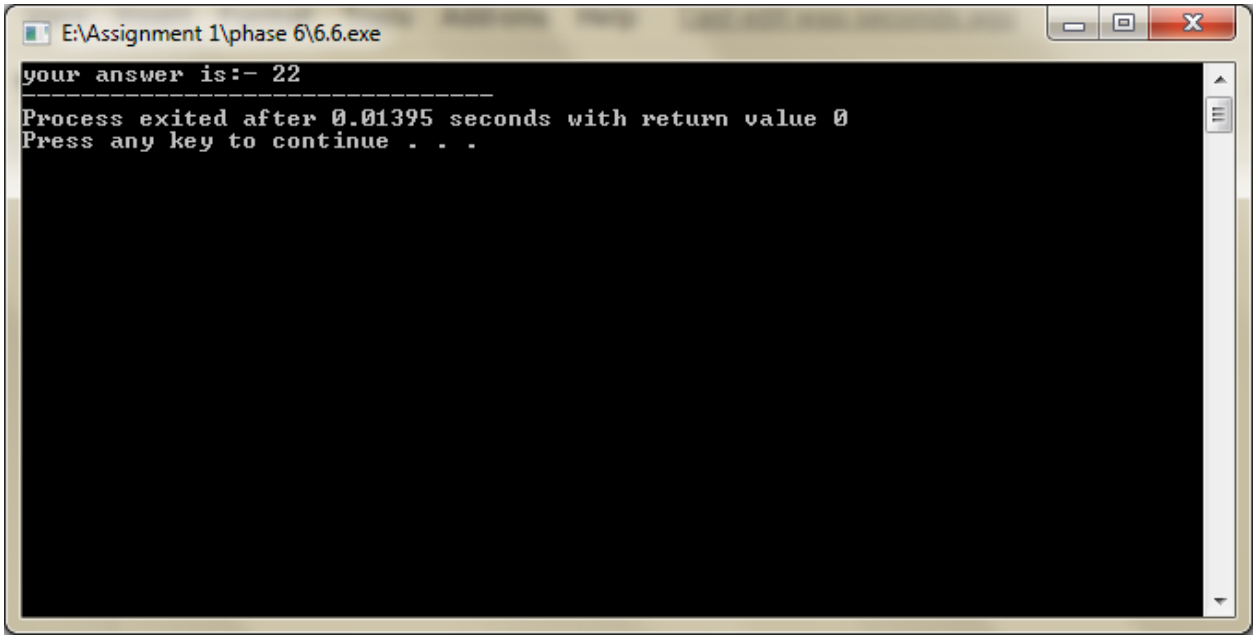
Aim-:6A 26 m long rope is stretched from the top of a 13 m tree to the ground. Find the distance between the tree and the end of the rope on the ground.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Pyth

{
    int a=25,c=60,d,temp=0;
    float b;
    public:
          void setdata()
          {
                a =a*a;
      c =c*c;
                d=c-a;
                b = d/ 2;

   while(b!=temp)
   {
      temp = b;
      b = (d/temp + temp)/2;
   }
   cout<<"your answer is:- "<<b;

          }


};
int main()
{
         Pyth p1;
```

```
        p1.setdata();


        return 0;
}
```

Output:



Practical - 7

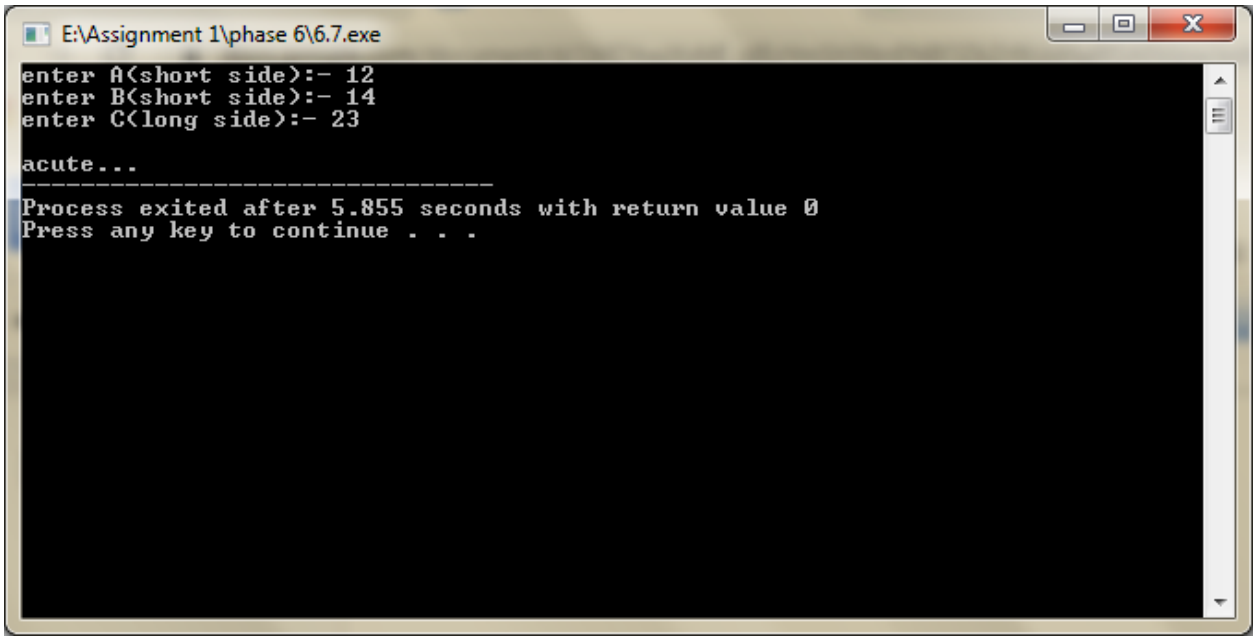
Aim:- Build a C++ system which helps a Mathematician to figure out the type of a Triangle. Bases on Pythagoras' theorem, find out if a triangle is: obtuse, right or acute.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Pyth

{
    int a,c,b,d,e,temp=0;
    public:
          void setdata()
          {
                cout<<"enter A(short side):- ";
                cin>>a;
                cout<<"enter B(short side):- ";
                cin>>b;
                cout<<"enter C(long side):- ";
                cin>>c;
                a =a*a;
       b =b*b;
                d=a+b;
                e = d/ 2;

          while(e!=temp)
          {
          temp = e;
          e = (d/temp + temp)/2;
          }

                if(c==e)
```

```
                {
                   cout<<endl<<"right...";
                }
                else if(c<=e)
                {
                   cout<<endl<<"obtuse...";
                }
                else
                {
                   cout<<endl<<"acute...";
                }
          }


};
int main()
{
        Pyth p1;
        p1.setdata();


        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.7.exe
enter A(short side):- 12
enter B(short side):- 14
enter C(long side):- 23
acute...
Process exited after 5.855 seconds with return value 0
Press any key to continue . . .

Practical - 8

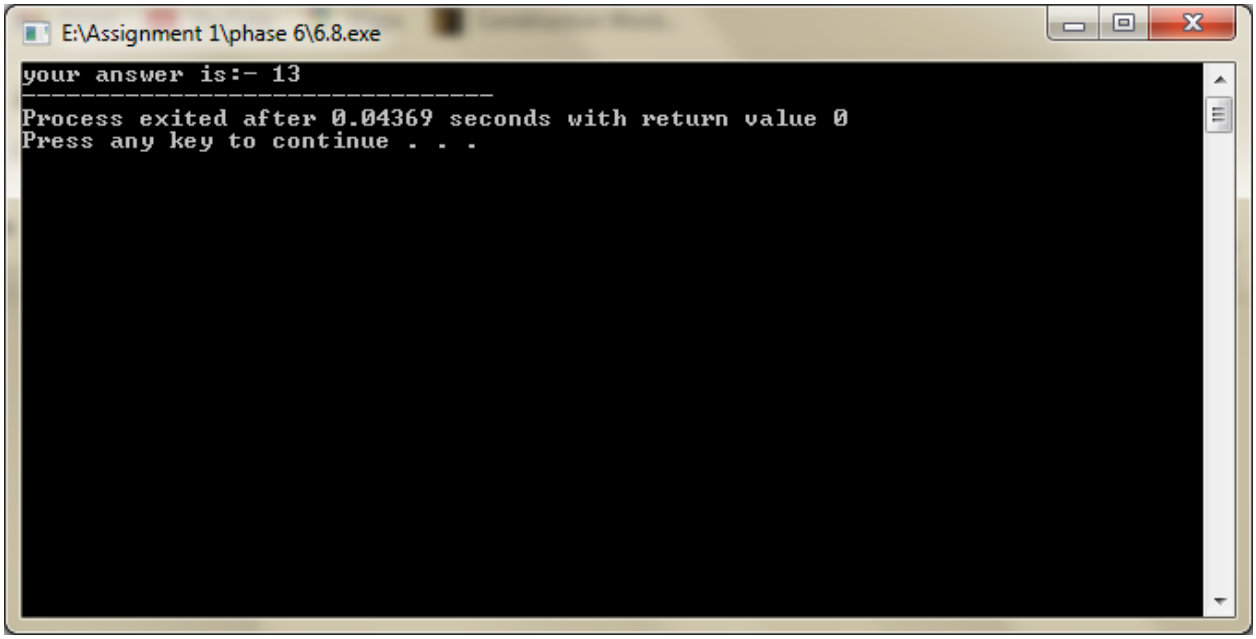
Aim:- A 15 m fire-fighter's ladder is leaning against the wall. If the ground distance between the foot of the ladder and the wall is 7 m, what is the wall's height?

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Pyth
{
   int a=3,c=20,d,temp=0;
   float b;
   public:
         void setdata()
         {
                  a =a*a;
      c =c*c;
                  d=c-a;
                  b = d/ 2;

   while(b!=temp)
   {
      temp = b;
      b = (d/temp + temp)/2;
   }
   cout<<"your answer is:- "<<b;

         }


};
int main()
```

```
{
        Pyth p1;
        p1.setdata();


        return 0;
}
```

Output:



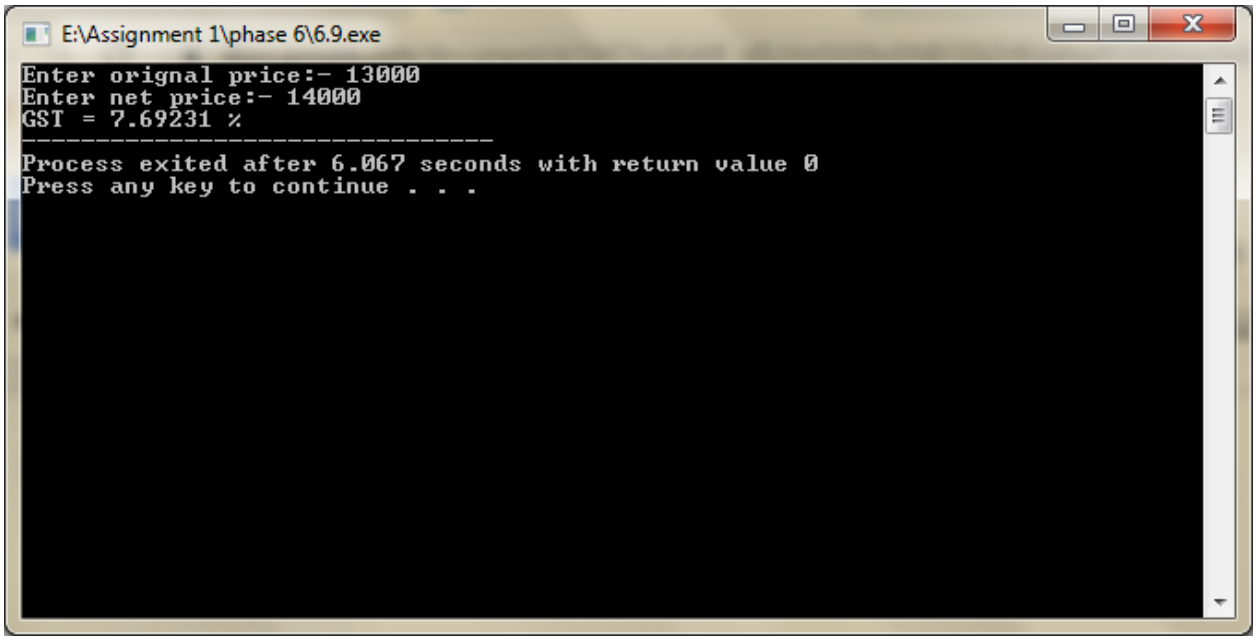
Practical - 9

Aim:- Design a GST Calculator in C++ to find total TAX on various types of categorized items. Apply proper types of Indian GST TAX varients based on different types of Goods. GST have been divided into four GST rates – 5%, 12%, 18%, and 28% by the GST Council.

Program:

```
#include <iostream>
#include<string.h>
using namespace std;

class Gst
{
    float orignal_price,net_price;
    public:
     void setdata()
            {
                    cout<<"Enter orignal price:- ";
                    cin>>orignal_price;
                    cout<<"Enter net price:- ";
                    cin>>net_price;
                    cout << "GST = "<<(((net_price - orignal_price) * 100) / orignal_price)<< " % ";
            }
};

int main()
{
        Gst G1;
        G1.setdata();
        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.9.exe
Enter orignal price:- 13000
Enter net price:- 14000
GST = 7.69231 %

Process exited after 6.067 seconds with return value 0
Press any key to continue . . .

Practical - 10

Aim-: Develop a C++ solution by which a user can add/ subtract/ multiply/ divide two Complex numbers with help of Operator Overloading concept. In context of math, a complex number contains two parts: a real part and an imagenary part.

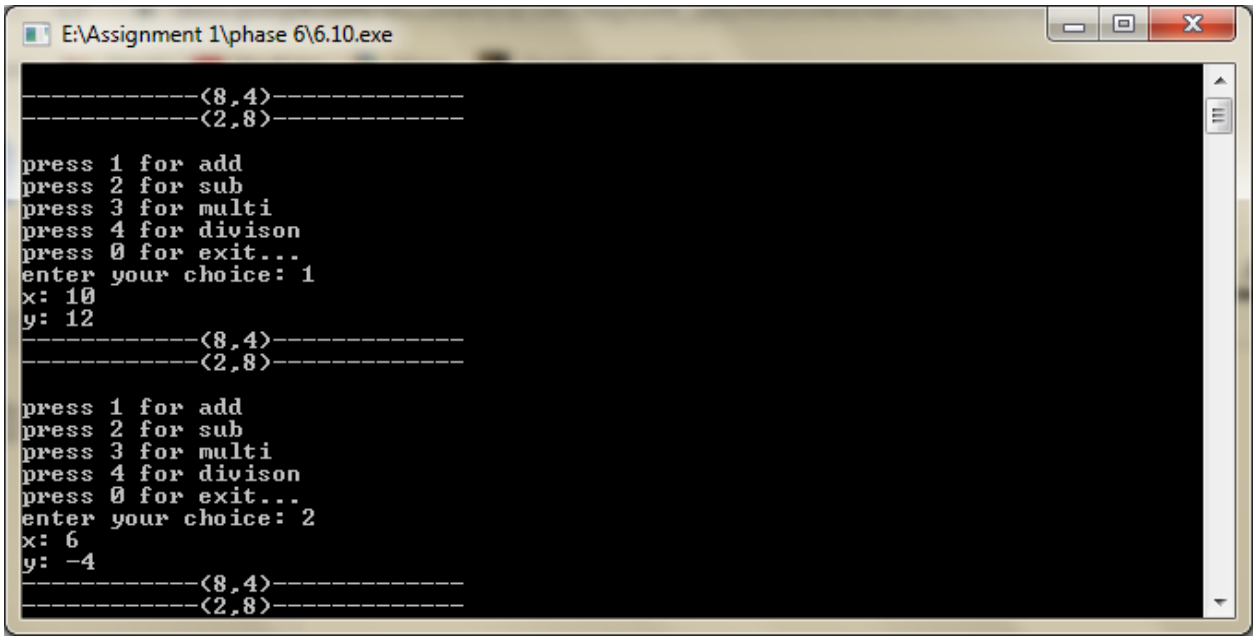
Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Complex
{
    int x,y;
    public:
    void setdata(int a, int b)
    {
        this->x = a;
        this->y = b;
        }

        void getdata()
        {
            cout<<"x: "<<this->x<<endl;
            cout<<"y: "<<this->y;
        }
        Complex operator+(Complex n)
        {
            Complex temp;
            temp.x =this->x + n.x;
            temp.y =this->y + n.y ;
            return temp;
        }
        Complex operator-(Complex n)
```

```
        {
                Complex temp;
                temp.x =this->x - n.x;
                temp.y =this->y - n.y ;
                return temp;
        }
        Complex operator*(Complex n)
        {
                Complex temp;
                temp.x =this->x * n.x;
                temp.y =this->y * n.y ;
                return temp;
        }
        Complex operator/(Complex n)
        {
                Complex temp;
                temp.x =this->x / n.x;
                temp.y =this->y / n.y ;
                return temp;
        }
};

int main()
{
        Complex s1,s2,s3,s4,s5,s6;
        int m;
        s1.setdata(3,10);
   s2.setdata(9,6);
   s3 = s1 + s2;
   s4 = s1 - s2;
   s5 = s1 * s2;
   s6 = s1 / s2;


   for(int i=0; i<=1; i--)
   {
   cout<<endl<<".....(3,10)....."<<endl<<".....(9,6)....."<<endl<<endl;
   cout<<"press 1 for add"<<endl
      <<"press 2 for sub"<<endl
      <<"press 3 for multi"<<endl
```

```
        <<"press 4 for divison"<<endl
        <<"press 0 for exit..."<<endl;

        cout<<"enter your choice: ";
        cin>>m;

        switch(m)
        {
           case 1:
                        s3.getdata();
                        break;
           case 2:
                                s4.getdata();
                                break;
                        case 3:
                                s5.getdata();
                                        break;
                        case 4:
                                s6.getdata();
                                        break;
                        case 0:
                                        return 0;
                                break;

                        default:
                                cout<<"invalid choice: ";


                }
    }

           return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.10.exe
----------(8,4)----------
----------(2,8)----------
press 1 for add
press 2 for sub
press 3 for multi
press 4 for divison
press 0 for exit...
enter your choice: 1
x: 10
y: 12
----------(8,4)----------
----------(2,8)----------
press 1 for add
press 2 for sub
press 3 for multi
press 4 for divison
press 0 for exit...
enter your choice: 2
x: 6
y: -4
----------(8,4)----------
----------(2,8)----------

Practical - 11

Aim:- Build an Indian Regional Festival system in C++. User can enter any date of current running year, and bases on that date display which festival will be coming on that date.

Program:

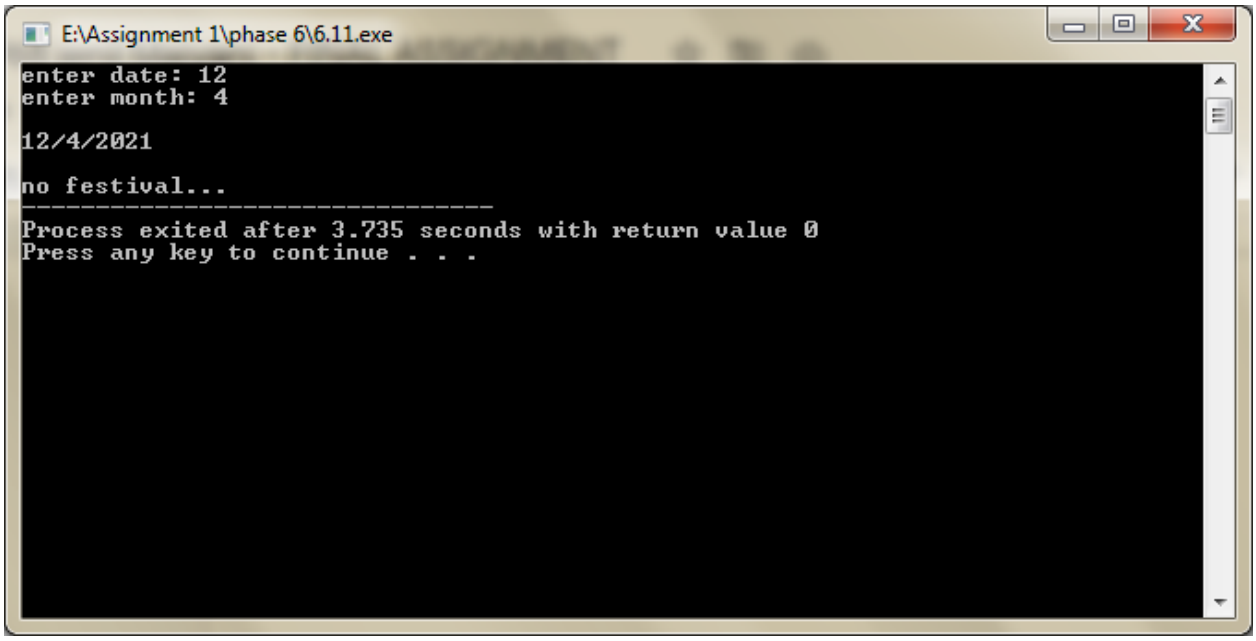
```
#include<iostream>
#include<string.h>
using namespace std;

class Day
{
    int date,month,year=2021;
    public:
      void setdata()
                {
                  cout<<"enter date: ";
                  cin>>this->date;
                  cout<<"enter month: ";
                  cin>>this->month;
                }
                void getdata()
                {
                        cout<<endl<<date<<"/"<<month<<"/"<<"2021"<<endl<<endl;
                        if(date==4 && month==9)
                        {
                                cout<<"Diwali";
                        }
                        else if(date==28 && month==3)
                        {
                                cout<<"Holi";
                        }
                        else if(date==7 && month==10)
                        {
                                cout<<"Navratri";
                        }
```

```
else if(date==11 && month==10)
{
        cout<<"Durga Puja";
}
else if(date==15 && month==10)
{
        cout<<"Dashra";
}
else if(date==30 && month==8)
{
        cout<<"Janmashtami";
}
else if(date==10 && month==9)
{
        cout<<"Ganesh Chaturthi";
}
else if(date==14 && month==5)
{
        cout<<"Eid-ul-Fitr";
}
else if(date==25 && month==12)
{
        cout<<"Christmas";
}
else if(date==11 && month==3)
{
        cout<<"Maha Shivratri";
}
else if(date==22 && month==8)
{
        cout<<" Rakshabandhan";
}
else if(date==12 && month==8)
{
        cout<<"Onam";
}
else if(date==13 && month==4)
{
        cout<<"Baisakhi";
}
```

```
else if(date==19 && month==9)
{
	cout<<"Gurpurab";
}
else if(date==14 && month==1)
{
	cout<<"Makar Sankranti";
}
else if(date==4 && month==4)
{
	cout<<"Easter";
}
else if(date==20 && month==6)
{
	cout<<"Hemis";
}
else if(date==10 && month==11)
{
	cout<<"Chhath Puja";
}
else if(date==29 && month==3)
{
	cout<<"Gangaur";
}
else if(date==1 && month==12)
{
	cout<<"Hornbill Festival";
}
else if(date==26 && month==5)
{
	cout<<"Saga Dawa";
}
else if(date==4 && month==7)
{
	cout<<"Dree Festival";
}
else if(date==15 && month==2)
{
	cout<<"Lui-Ngai-Ni";
}
```

```
                else if(date==1 && month==5)
                {
                        cout<<"Moatsu Mong";
                }
                else
                {
                        cout<<"no festival...";
                }
        }

};
int main()
{
        Day D1;
        D1.setdata();
        D1.getdata();
        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.11.exe
enter date: 12
enter month: 4
12/4/2021
no festival...
Process exited after 3.735 seconds with return value 0
Press any key to continue . . .

Practical - 12

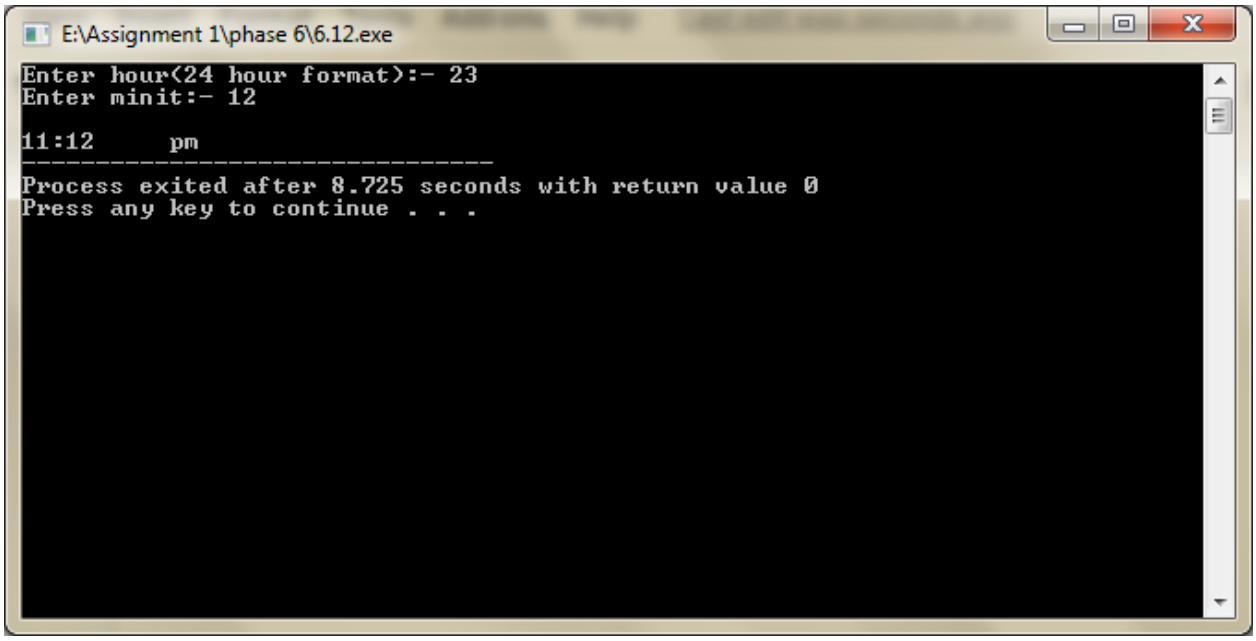
Aim:- Prince wants to create a 24 Hr time convertor app in C++. In this app, user can provide any 24 Hr time he/she wants but output must be produced in 12 Hr format. For example,
i/p: 15 Hr, 32 Minutes
o/p: 3:32 PM

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Time
{
   int hour,minit,temp=0;
   public:
      void setdata()
                {
                  cout<<"Enter hour(24 hour format):- ";
                  cin>>hour;
                  cout<<"Enter minit:- ";
                  cin>>minit;
                }
                void getdata()
                {

                        if(hour>24)
                        {
                                cout<<"not valid time..";
                        }
                        else if(minit>=60)
                        {
                                cout<<"not valid time..";
                        }
                        else
                        {
```

```
                        if(hour>12)
                        {
                                for(int i=0;hour>12;i++)
                                {
                                        hour--;
                                        temp++;
                                }
                                cout<<endl<<temp<<":"<<minit<<"     pm";
                        }
                        else
                        {
                                cout<<endl<<hour<<":"<<minit<<"     am";
                        }

                }

        }
};
int main()
{
        Time t1;
        t1.setdata();
        t1.getdata();
        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.12.exe
Enter hour(24 hour format):- 23
Enter minit:- 12
11:12 pm
Process exited after 8.725 seconds with return value 0
Press any key to continue . . .

Practical - 13

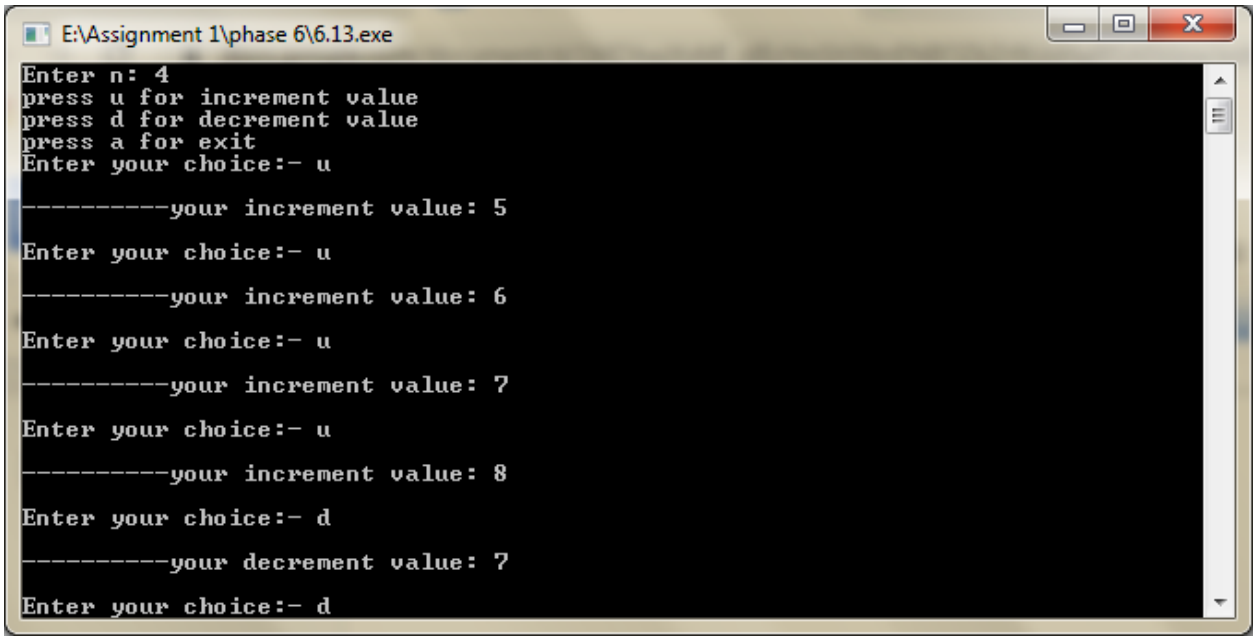
Aim-: Build a Counter App in C++ using OOP concept. Initially the counter meant to be set as a value 0 using constructor. By pressing UP Arrow from keyboard, counter will be increment and by pressing DOWN Arrow, counter will be decrement. You can use ASCII value concept by achieving this type of functionality at the execution time of a Program.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Arrow
{
    char A;
    public:
      Arrow (int a)
                {
                        cout<<"press u for increment value"<<endl
                           <<"press d for decrement value"<<endl
                                <<"press a for exit"<<endl;

                        for(int i=0; i<=1; i--)
                        {
                                cout<<"Enter your choice:- ";
                                cin>>A;
                                switch(A)
                                {
                                        case 'u':
                                                a++;
                                                        cout<<endl<<"----------your increment
value: "<<a<<endl<<endl;
```

```
                                        break;

                                case 'd':
                                a--;
                                        cout<<endl<<"----------your decrement
value: "<<a<<endl<<endl;
                                        break;

                                case 'a' :
                                break;

                                default :
                                cout<<endl<<"----------Invalid choice..."<<endl<<endl;
                                 break;

                        }
                        if(A=='a')
                        {
                                break;
                                }
                }


        }
};
int main()
{
   int n;
        cout<<"Enter n: ";
        cin>>n;
        Arrow a1(n);
        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.13.exe
Enter n: 4
press u for increment value
press d for decrement value
press a for exit
Enter your choice:- u
----------your increment value: 5
Enter your choice:- u
----------your increment value: 6
Enter your choice:- u
----------your increment value: 7
Enter your choice:- u
----------your increment value: 8
Enter your choice:- d
----------your decrement value: 7
Enter your choice:- d

Practical - 14

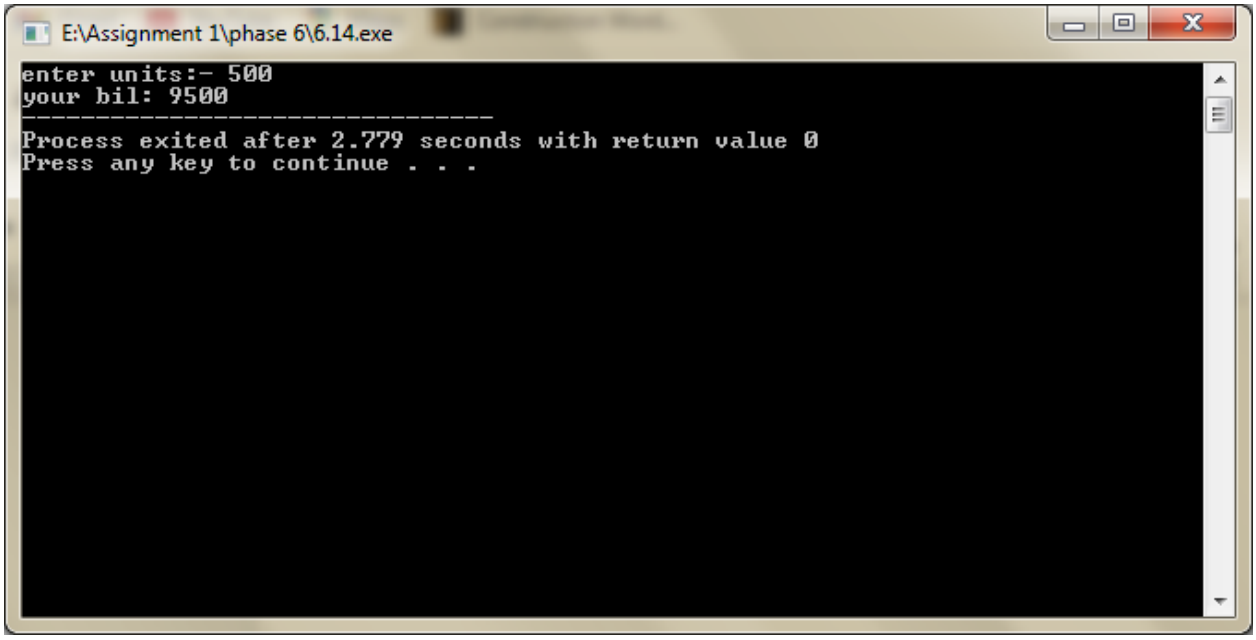
Aim:- Calculate an Electricity Bill of a House of one month based on total units burned. Develop a C++ solution for this calculation.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Calc
{
	int units;
	public:

	void setdata()
		{
		  cout<<"enter units:- ";
		  cin>>units;
		}
		void getdata()
		{
			if (units <= 100)
			{
				cout<<"your bil: "<<units * 10;
			}
			else if (units <= 200)
			{
				cout<<"your bil: "<<(100 * 10) +(units - 100) * 15;
			}
			else if (units <= 300)
			{
				cout<<"your bil: "<<(100 * 10) +(100 * 15) +(units - 200) * 20;
			}
			else if (units > 300)
			{
```

```
                                cout<<"your bil: "<<(100 * 10) +(100 * 15) +(100 * 20) +(units -
300) * 25;
                }
                   }

};

int main()
{
        Calc c1;
        c1.setdata();
        c1.getdata();
        return 0;
}
```

Output:



Practical - 15

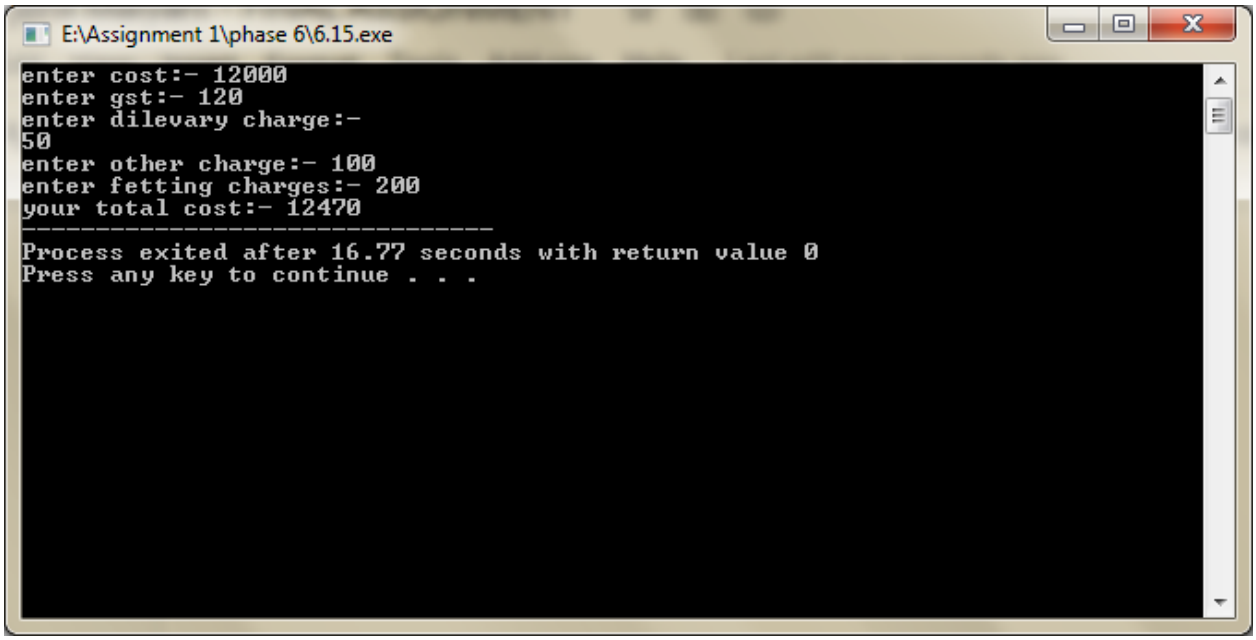
Aim-:15 Calculate total coast to apply a Solar Powered Panels for your Home Rooftop. Apply all types of government aid percentage to find reasonable coast.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Cost
{
    int c,g,d,e,f;
    public:
     void setdata()
            {
               cout<<"enter cost:- ";
                    cin>>c;
                    cout<<"enter gst:- ";
                    cin>>g;
                    cout<<"enter delivery charge:- ";
                    cin>>d;
                    cout<<"enter other charge:- ";
                    cin>>e;
                    cout<<"enter fetting charges:- ";
                    cin>>f;
            }
            void getdata()
            {
                  cout<<"your total cost:- "<<c+g+d+e+f;
            }
};
int main()
{
        Cost c1;
```

```
        c1.setdata();
        c1.getdata();
        return 0;
}
```

Output:



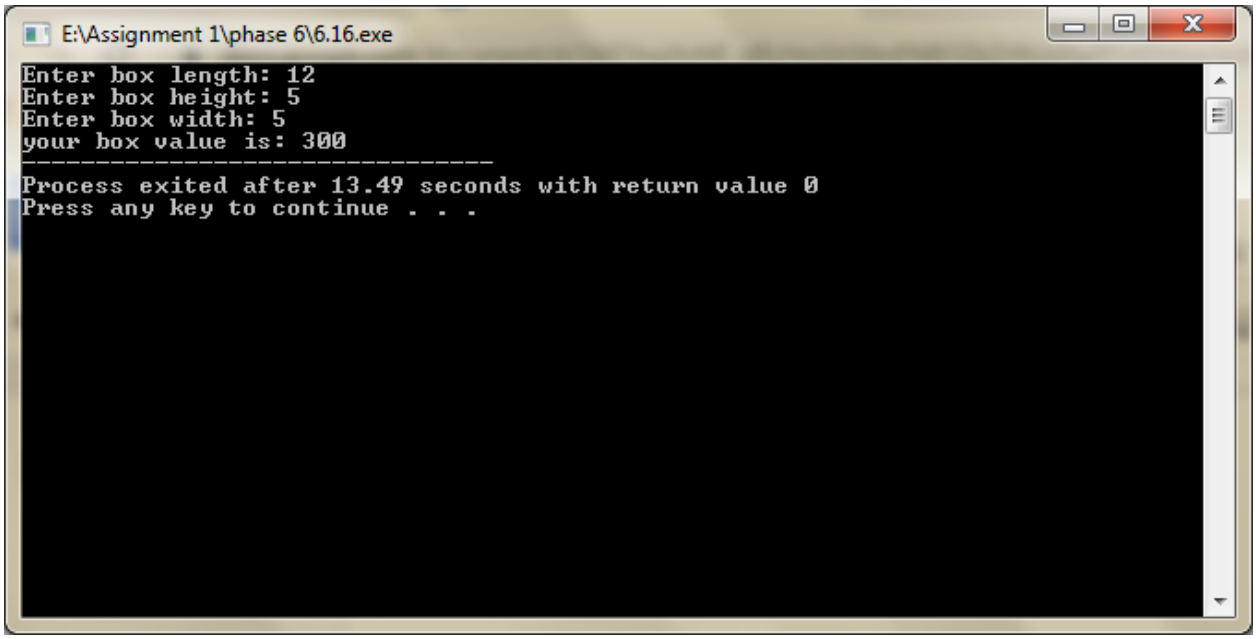
Practical - 16

Aim-:16 Find Volume of a Box using Parameterized Constructor and figure out if that is odd or even number.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class box
{
int length,height,width;
public:
        void setdata()
        {
                cout<<"Enter box length: ";
                        cin>>length;
                        cout<<"Enter box height: ";
                        cin>>height;
                        cout<<"Enter box width: ";
                        cin>>width;
        }
        void getdata()
        {
                cout<<"your box value is: "<<length*height*width;
        }
};
int main()
{
        box b1;
        b1.setdata();
        b1.getdata();
        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.16.exe
Enter box length: 12
Enter box height: 5
Enter box width: 5
your box value is: 300

Process exited after 13.49 seconds with return value 0
Press any key to continue . . .

Practical - 17

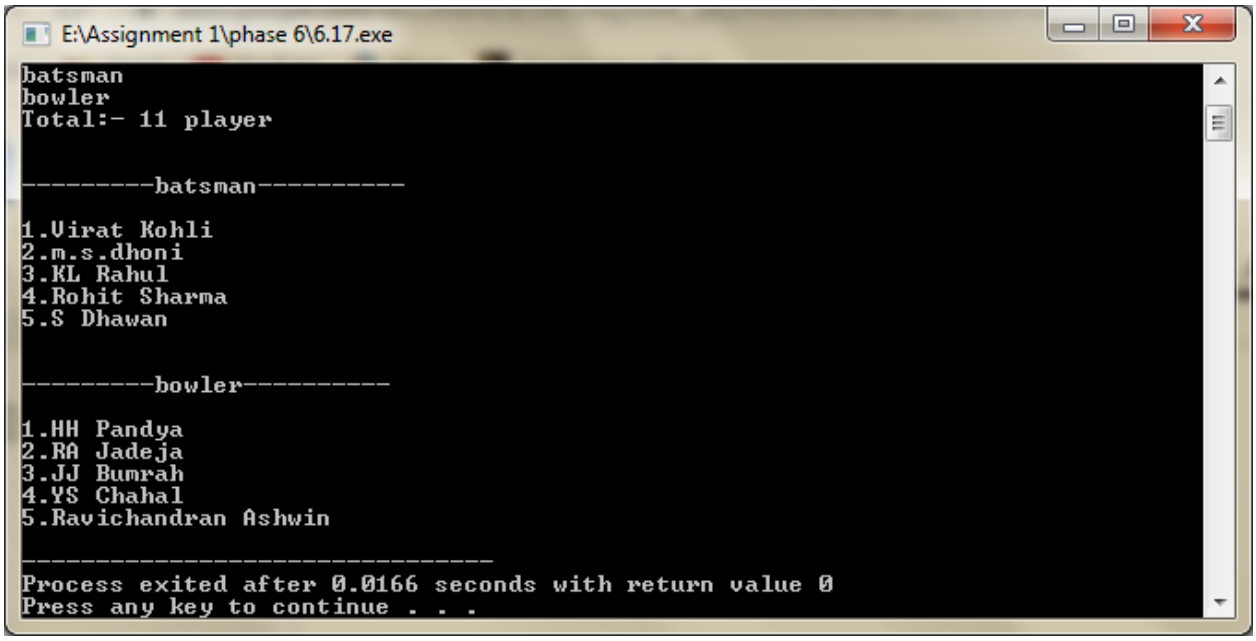
Aim-:17 By creating below mentioned inherited structure of calsses, Assume suitable data and member methods for creating a Cricket scenario and listing score tables for top five players.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Player
{
   char c[100];
   public:
      void game()
      {
         cout<<"cricket team."<<endl
            <<"football team."<<endl
            <<"kabaddi team."<<endl;
                  }
};
class Cricket_player : public Player
{
public:
         void cricket()
   {
         cout<<endl<<"batsman"<<endl
                     <<"bowler"<<endl
                           <<"Total:- 11 player"<<endl;
         }

};
class Batsman : public Cricket_player
{
         public:
         void bat()
```

```
   {
        cout<<endl<<endl<<"......batsman....."<<endl;
        cout<<endl<<"1.Virat Kohli"<<endl
                <<"2.m.s.dhoni"<<endl
                    <<"3.KL Rahul"<<endl
                    <<"4.Rohit Sharma"<<endl
                    <<"5.S Dhawan"<<endl;
        }
};
class Bowler : public Cricket_player
{
        public:
        void bow()
   {
        cout<<endl<<endl<<".....bowler....."<<endl;
        cout<<endl<<"1.HH Pandya"<<endl
                <<"2.RA Jadeja"<<endl
                    <<"3.JJ Bumrah"<<endl
                    <<"4.YS Chahal"<<endl
                    <<"5.Ravichandran Ashwin"<<endl;
        }

};
int main()
{
        Batsman b1;
        Bowler  bo1;
        b1.game();
        b1.cricket();
        b1.bat();
        bo1.bow();
        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.17.exe
batsman
bowler
Total:- 11 player
---------batsman----------
1.Virat Kohli
2.m.s.dhoni
3.KL Rahul
4.Rohit Sharma
5.S Dhawan
---------bowler----------
1.HH Pandya
2.RA Jadeja
3.JJ Bumrah
4.YS Chahal
5.Ravichandran Ashwin

Process exited after 0.0166 seconds with return value 0
Press any key to continue . . .

Practical - 18

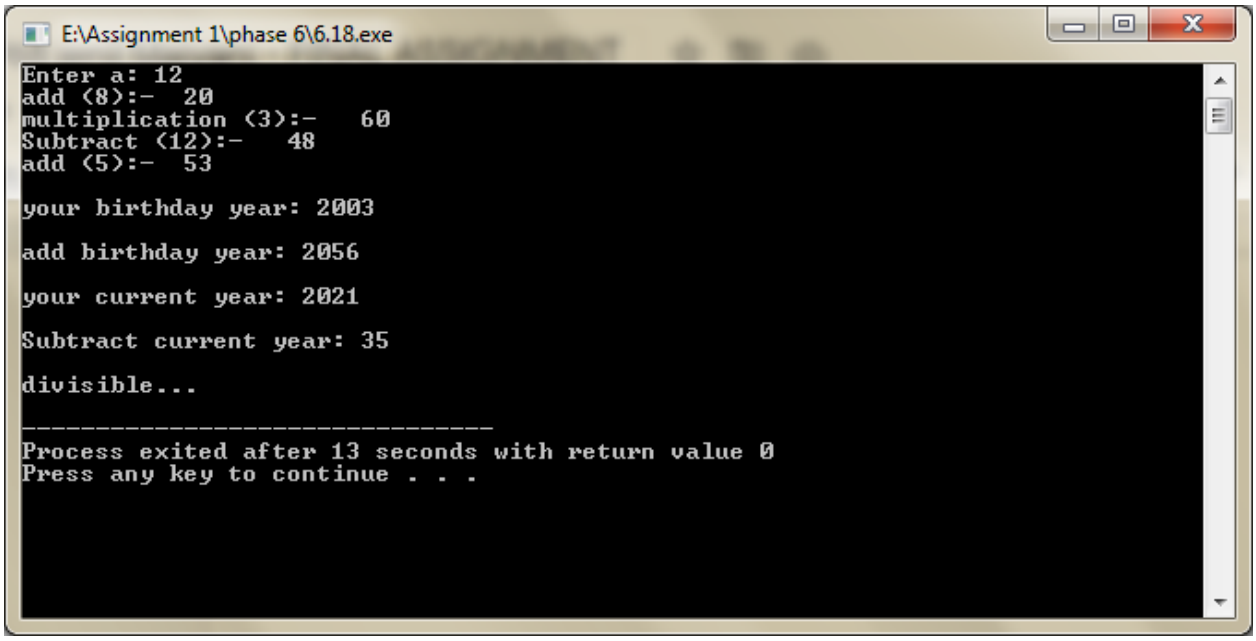
Aim-:18 Help Ayush to perform given operation:
a. Assume any number
b. Add 8 in that number
c. Multiply it with 3
d. Subtract 12 from it
e. Add another 5 into that
f. Add your birth year in it
g. Subtract current year from that
Finally display which number he get after performing all above mentioned operations and find is it divisible by 7 or not.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Logic
{
    int a,b,c;
    public:
      void setdata()
                {
                   cout<<"Enter a: ";
                         cin>>this->a;
                }
                void getdata()
                {
                 a=a+8;
                 cout<<"add (8):-  "<<a<<endl;
                 a=a*3;
                 cout<<"multiplication (3):-   "<<a<<endl;
                 a=a-12;
```

```
                cout<<"Subtract (12):-   "<<a<<endl;
                a=a+5;
                cout<<"add (5):-  "<<a<<endl;
                cout<<endl<<"your birthday year: ";
                cin>>b;
                a=a+b;
                cout<<endl<<"add birthday year: "<<a<<endl;
                cout<<endl<<"your current year: ";
                cin>>c;
                a=a-c;
                cout<<endl<<"Subtract current year: "<<a<<endl;

                if(a%7==0)
                {
                        cout<<endl<<"divisible..."<<endl;
                }
                else
                {
                        cout<<endl<<"not divisible..."<<endl;
                }
               }

};
int main()
{
        Logic l1;
        l1.setdata();
        l1.getdata();
        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.18.exe
Enter a: 12
add (8):- 20
multiplication (3):- 60
Subtract (12):- 48
add (5):- 53
your birthday year: 2003
add birthday year: 2056
your current year: 2021
Subtract current year: 35
divisible...
Process exited after 13 seconds with return value 0
Press any key to continue . . .

Practical - 19

Aim-:19 Help a builder to build a house as same as structurized as below:

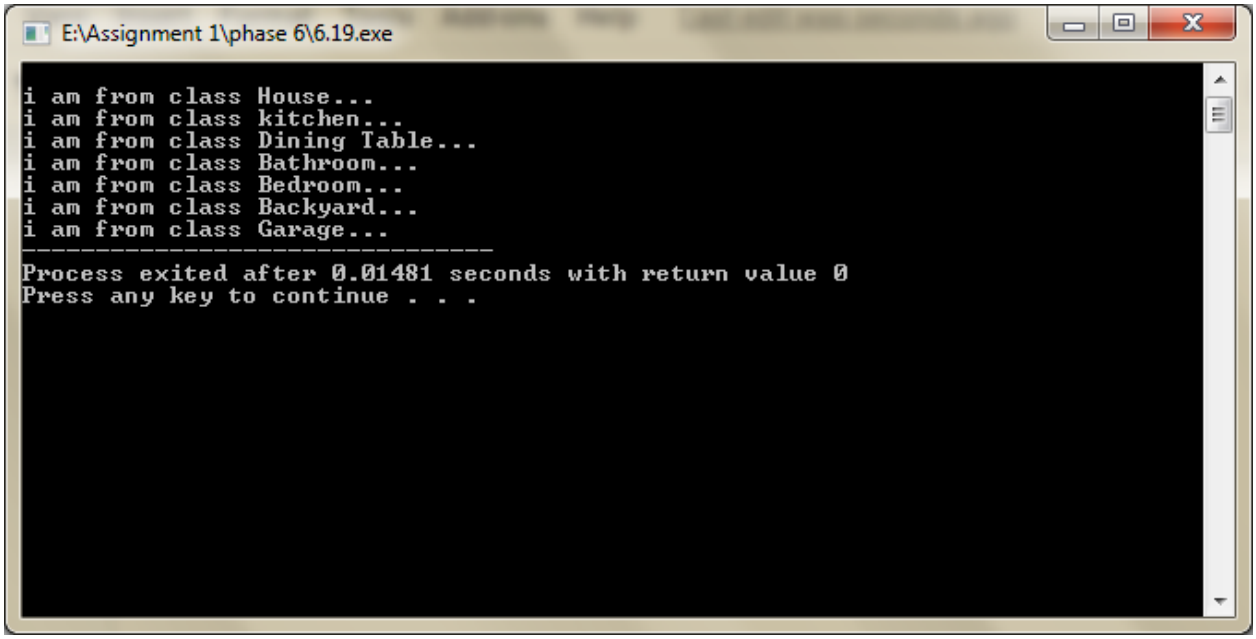
Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class House
{
      public:
      void hou()
            {
              cout<<endl<<"i am from class House...";
            }

};
class Kitchen : public House
{
            public:
      void kitch()
            {
              cout<<endl<<"i am from class kitchen...";
            }

};
class Bedroom : public House
{
            public:
      void bed()
            {
              cout<<endl<<"i am from class Bedroom...";
            }
};
class Backyard : public House
{
            public:
```

```
    void back()
        {
          cout<<endl<<"i am from class Backyard...";
        }
};
class Dining_Table : public Kitchen
{
        public:
    void dining()
        {
          cout<<endl<<"i am from class Dining Table...";
        }
};
class Bathroom : public Bedroom
{
        public:
    void bath()
        {
          cout<<endl<<"i am from class Bathroom...";
        }
};
class Garage : public Backyard
{
        public:
    void gar()
        {
          cout<<endl<<"i am from class Garage...";
        }
};
int main()
{
        Dining_Table d1;
        Bathroom b1;
        Garage g1;
        d1.hou();
        d1.kitch();
        d1.dining();
        b1.bath();
        b1.bed();
        g1.back();
```

```
    g1.gar();
    return 0;
}
```

Output:



Practical - 20

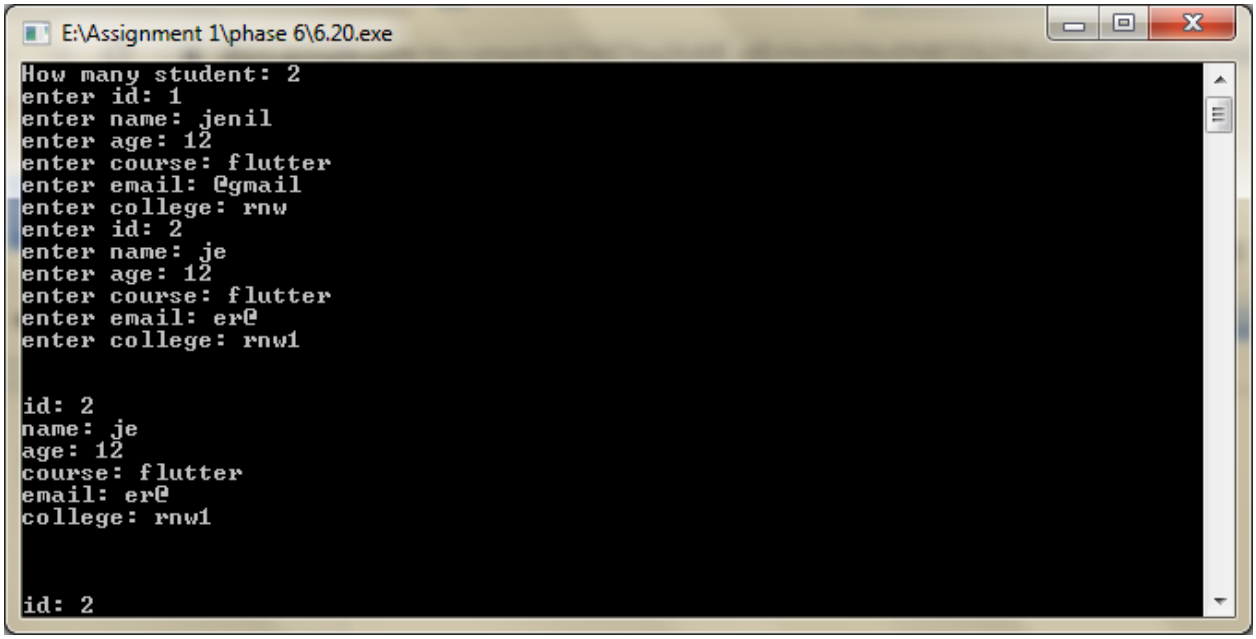
Aim-:20 A Higher Secondary School opens after COVID-19 crisis and the admission process will be starting for registration of students. Help administration department for registering student information such liker
w stu_id
w stu_name
w stu_age
w stu_course
w stu_email
w stu_college

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Student
{
   public:
         int stu_id;
         char stu_name[100];
         int stu_age;
         char stu_course[100];
         char stu_email[100];
         char stu_college[100];
      void setdata()
            {
                        cout<<"enter id: ";
                              cin>>stu_id;
                              cout<<"enter name: ";
                              cin>>stu_name;
                              cout<<"enter age: ";
                              cin>>stu_age;
```

```
                                cout<<"enter course: ";
                                cin>>stu_course;
                                cout<<"enter email: ";
                                cin>>stu_email;
                                fflush(stdin);
                                cout<<"enter college: ";
                                cin>>stu_college;

        }
        void getdata()
        {
                cout<<endl<<endl<<"id: "<<stu_id<<endl<<"name: "<<stu_name<<endl
                        <<"age: "<<stu_age<<endl<<"course: "<<stu_course<<endl
                        <<"email: "<<stu_email<<endl<<"college:
"<<stu_college<<endl<<endl;
        }

};
int main()
{
   int  n;
   cout<<"How many student: ";
        cin>>n;
   Student s1;

   for(int i=0;i<n; i++)
   {
        s1.setdata();
        }
        for(int i=0;i<n; i++)
   {
        s1.getdata();
        }
        return 0;

}
```

Output:


E:\Assignment 1\phase 6\6.20.exe
How many student: 2
enter id: 1
enter name: jenil
enter age: 12
enter course: flutter
enter email: @gmail
enter college: rnw
enter id: 2
enter name: je
enter age: 12
enter course: flutter
enter email: er@
enter college: rnw1
id: 2
name: je
age: 12
course: flutter
email: er@
college: rnw1
id: 2

Practical - 21

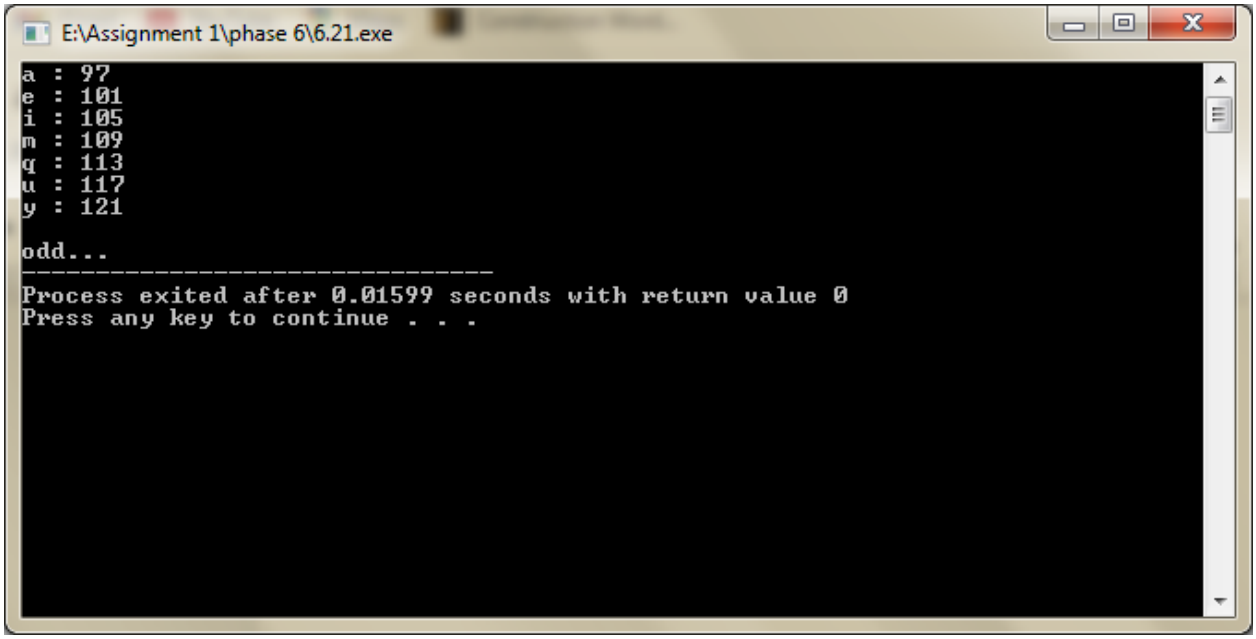
Aim-:21 Build a C++ solution which returns an array of all ASCII values of alphabets skipping 3 characters. Use the concept of Constructors. After returning that array, find addition of that values and decide whether it is a odd or even number.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Alphabet
{
int n;
char m;
public:
        void setdata()
        {
          for(int i='a';i<='z'; i=i+4 )
          {
                m=i;
                n += i;
                cout<<m<<" : "<<i<<endl;
          }
        }
        void getdata()
        {
              if(n%2==0)
              {
                    cout<<endl<<"even...";
              }
              else
              {
                    cout<<endl<<"odd...";
              }
        }
```

```
};
int main()
{
	Alphabet a1;
	a1.setdata();
	a1.getdata();
	return 0;
}
```

Output:



Practical - 22

Aim-:22 A Global survey held to collect information about hotels all around the world. Provide a C++ solution to create a class Hotel with fields like
w hotel_id
w hotel_name
w hotel_type
w hotel_staff_size
w hotel_room_size
w hotel_establish_year
w hotel_counter
w hotel_rating_type
w hotel_website
Illustrate the use of strict encapsulation with this keyword.

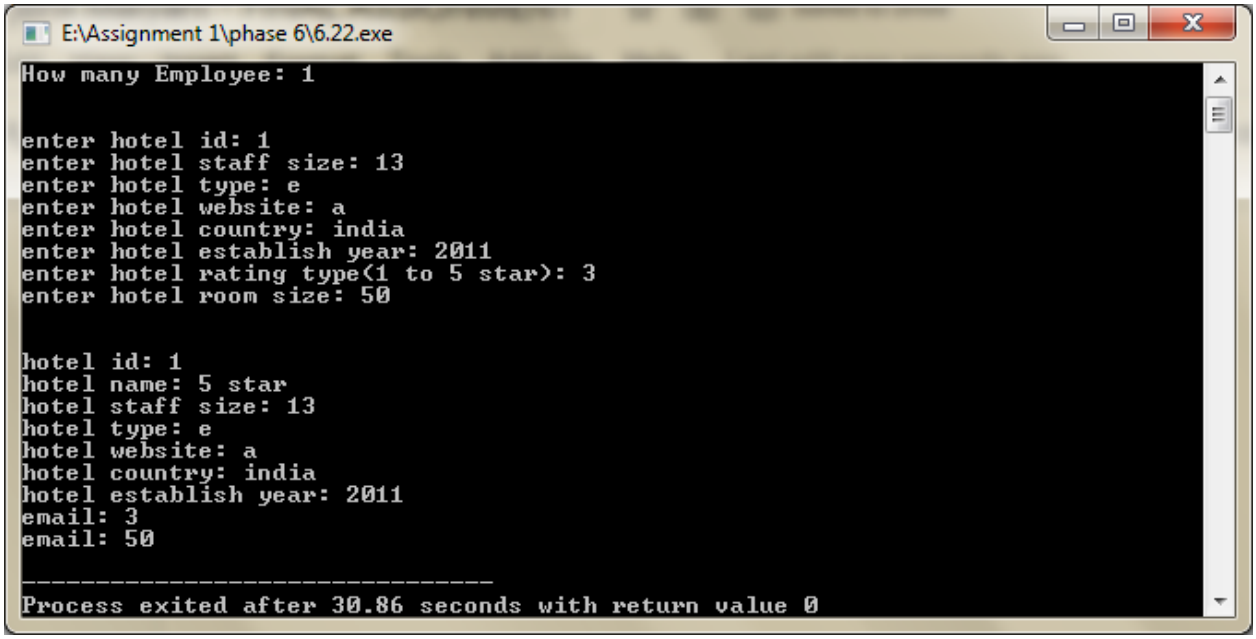
Program:

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

class Employee
{
   public:
         int hotel_id;
   static char hotel_name[100];
         int hotel_staff_size;
         char hotel_type[100];
         char hotel_website[100];
         char hotel_country[100];
         int hotel_room_size;
         int hotel_establish_year;
         int hotel_rating_type;

      void setdata()
            {
                        cout<<endl<<endl<<"enter hotel id: ";
                              cin>>this->hotel_id;
```

```
                cout<<"enter hotel staff size: ";
                cin>>this->hotel_staff_size;
                cout<<"enter hotel type: ";
                cin>>this->hotel_type;
                cout<<"enter hotel website: ";
                cin>>this->hotel_website;
                cout<<"enter hotel country: ";
                cin>>this->hotel_country;
                cout<<"enter hotel establish year: ";
                cin>>this->hotel_establish_year;
                cout<<"enter hotel rating type(1 to 5 star): ";
                cin>>this->hotel_rating_type;
        cout<<"enter hotel room size: ";
                cin>>this->hotel_room_size;
    }
    void getdata()
    {
            cout<<endl<<endl<<"hotel id: "<<hotel_id<<endl<<"hotel name:
"<<hotel_name<<endl<<"hotel staff size: "<<hotel_staff_size<<endl
                <<"hotel type: "<<hotel_type<<endl<<"hotel website:
"<<hotel_website<<endl
                <<"hotel country: "<<hotel_country<<endl<<"hotel establish year:
"<<hotel_establish_year<<endl
                <<"email: "<<hotel_rating_type<<endl<<"email:
"<<hotel_room_size<<endl;
    }

};
char Employee::hotel_name[100]="5 star";
int main()
{
int  n;
   cout<<"How many Employee: ";
        cin>>n;
   Employee e1;

   for(int i=0;i<n; i++)
   {
        e1.setdata();
        }
```

```
        for(int i=0;i<n; i++)
    {
        e1.getdata();
        }
        return 0;

}
```

Output:



Practical - 23

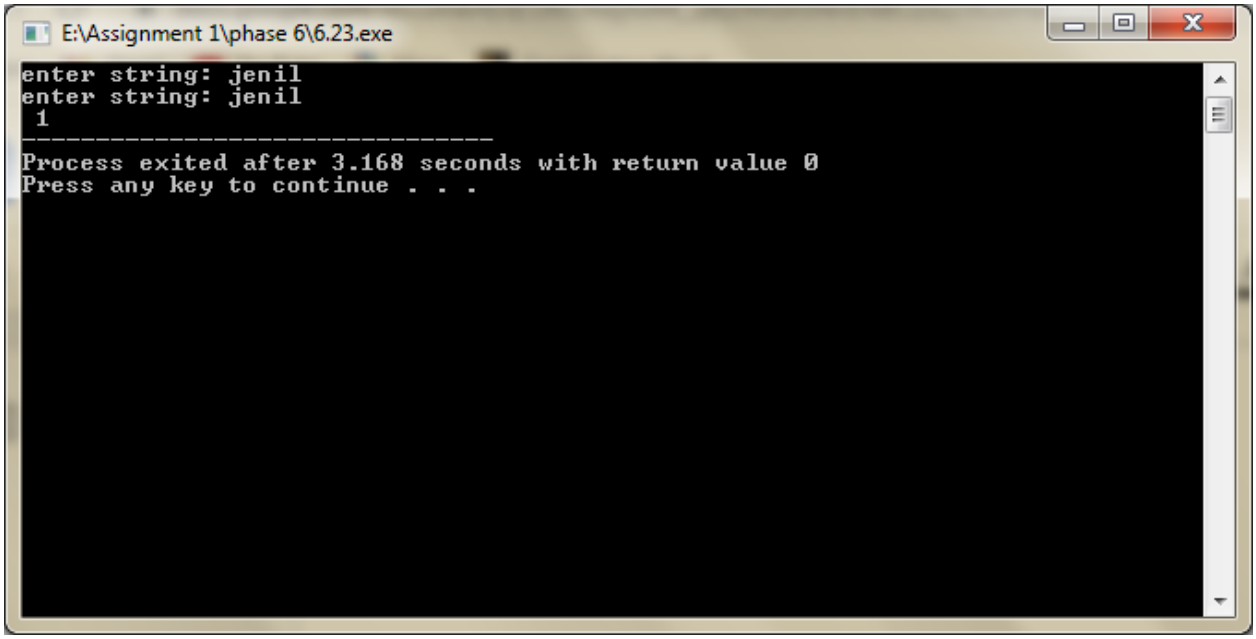
Aim-:23 Jemin wants to create an automated system which compares two given strings and it returns 1 if both strings are the same and 0 otherwise. Create a C++ system for helping Jemin using the overloading concept.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Compare
{
char a[100],b[100];
public:
      void string()
            {
              cout<<"enter string: ";
                    cin>>a;
            }
            void string(char n[])
            {
                strcpy(b,n);
            }
            void getdata()
            {
                    if(strcmp(a,b)==0)
                    {
                      cout<<" 1 ";
                    }
                    else
                    {
                            cout<<" 0 ";
                    }
            }
```

```
};
int main()
{
char c[100];

        Compare c1;
        c1.string();

        cout<<"enter string: ";
        cin>>c;
        c1.string(c);
        c1.getdata();
        return 0;
}
```

Output:



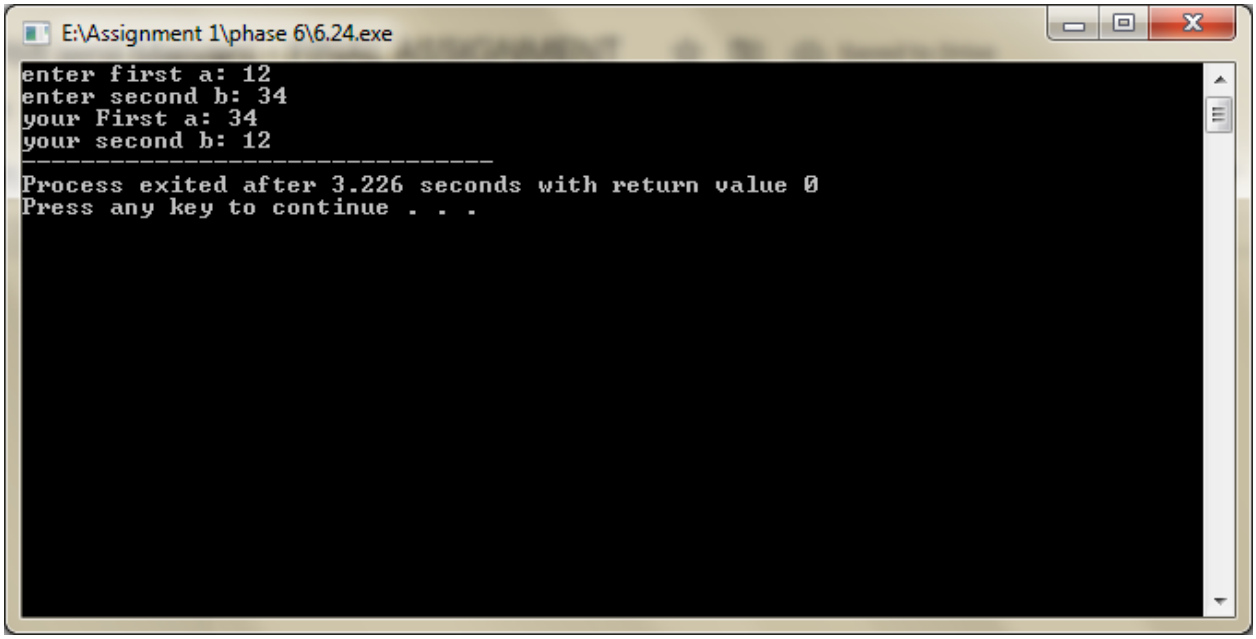
Practical - 24

Aim-:24 Design a swapping program using only constructors for helping Devansh to gain passing marks in examination.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Swap
{
int a,b,c;
    public:
    Swap()
        {
          cout<<"enter first a: ";
                cin>>a;
                cout<<"enter second b: ";
                cin>>b;
        }
        ~Swap()
        {
                c=a;
                a=b;
         b=c;
         cout<<"your First a: "<<a<<endl;
                cout<<"your second b: "<<b;
        }
};
int main()
{
        Swap s1;

        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.24.exe
enter first a: 12
enter second b: 34
your First a: 34
your second b: 12

Process exited after 3.226 seconds with return value 0
Press any key to continue . . .

Practical - 25

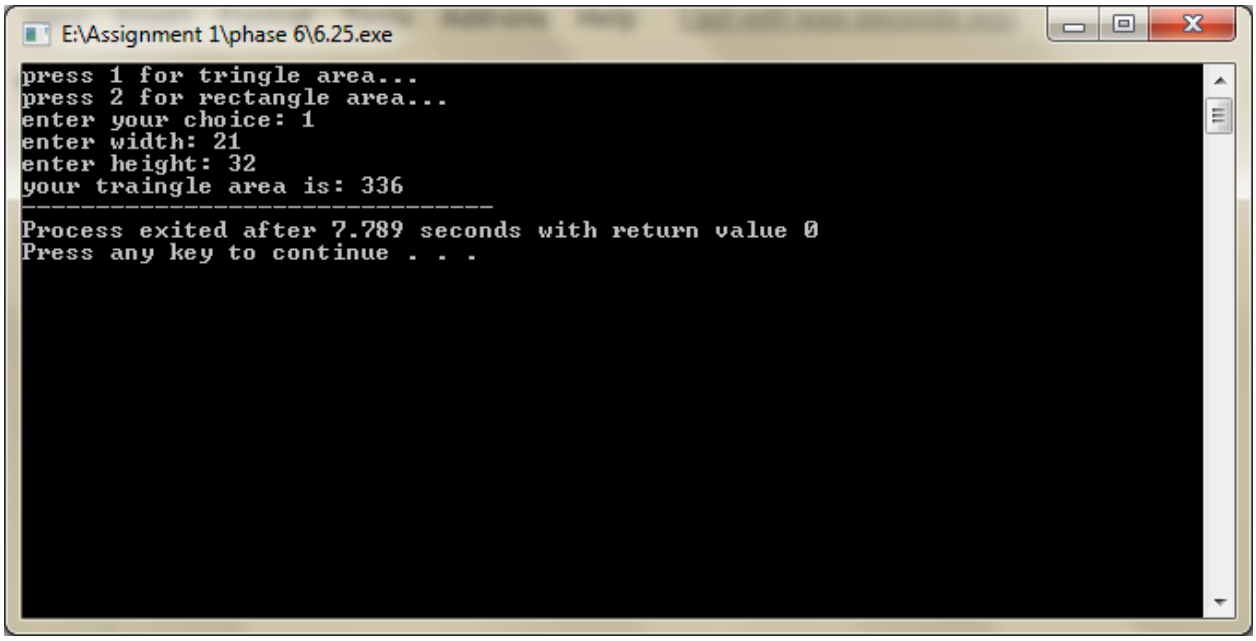
Aim-:25 Create a C++ Base class Shape with a constructor for providing values for width and height. Then define two derived classes Triangle and Rectangle, that calculate the area of the shape area(). In the main, define two objects: a triangle and a rectangle and then call the area() function by this two objects.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Shape
{
public:
int h,w;
      void setdata()
            {
             cout<<"enter width: ";
                  cin>>w;
                  cout<<"enter height: ";
                  cin>>h;
            }

};
class Tringle : public Shape
{
public:
       void t_area()
                  {
                        cout<<"your traingle area is: "<<(0.5)*h*w;
                  }

};
class Rectangle : public Shape
{
```

```
public:
        void r_area()
                {
                        cout<<"your rectangle area is: "<<w *h;
                }
};
int main()
{
   int n;
        Tringle t1;
        Rectangle r1;

        cout<<"press 1 for tringle area..."<<endl
           <<"press 2 for rectangle area..."<<endl;

        cout<<"enter your choice: ";
        cin>>n;
           if(n==1)
           {
                t1.setdata();
                t1.t_area();
                }
                else if(n==2)
                {
                        r1.setdata();
                        r1.r_area();
                }
                else
                {
                        cout<<"invalid choice...";
                }

}
```

Output:


E:\Assignment 1\phase 6\6.25.exe
press 1 for tringle area...
press 2 for rectangle area...
enter your choice: 1
enter width: 21
enter height: 32
your traingle area is: 336

Process exited after 7.789 seconds with return value 0
Press any key to continue . . .

Practical - 26

Aim-:26 By using Multilevel Inheritance, implement below mentioned structure in C++ for employee records system.

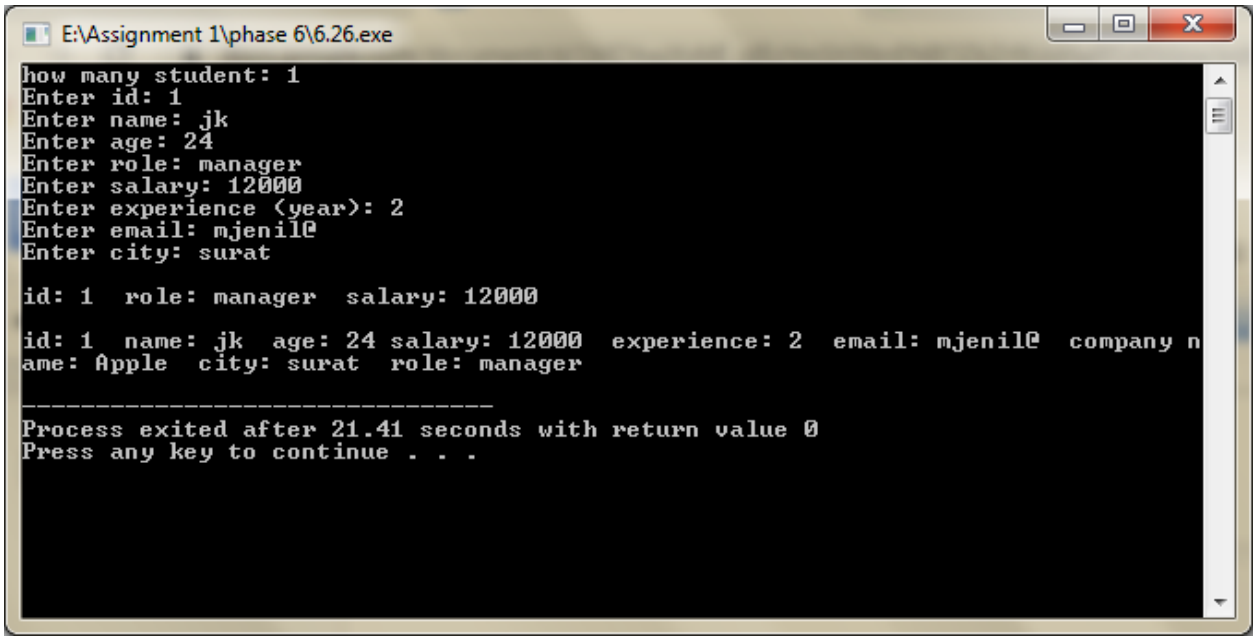
Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class A
{
  public:
  int id;
  char name[100];
  int age;
  int salary;
  int experience;
  char email[100];
  static char company_name[100];
  char city[100];
  char role[100];

  void set()
  {
        cout<<"Enter id: ";
        cin>>this->id;
        cout<<"Enter name: ";
        cin>>this->name;
        cout<<"Enter age: ";
        cin>>this->age;
  }

};
class B : public A
{
        public:
```

```
  void setdata()
  {
        cout<<"Enter role: ";
        cin>>this->role;
        cout<<"Enter salary: ";
        cin>>this->salary;
        fflush(stdin);
        cout<<"Enter experience (year): ";
        cin>>this->experience;
  }

};
class C : public B
{
        public:
        void setter()
        {
        cout<<"Enter email: ";
        cin>>this->email;
        cout<<"Enter city: ";
        cin>>this->city;
        }
        void getter()
        {
          cout<<endl<<"id: "<<this->id<<"  role: "<<this->role<<"  salary:
"<<this->salary<<endl;
        }


};
class D : public C
{
        public:
        void get()
        {
                cout<<endl<<"id: "<<this->id<<"  name: "<<this->name<<"  age:
"<<this->age<<" salary: "<<this->salary
                    <<"  experience: "<<this->experience<<"  email: "<<this->email<<"  company
name: "<<this->company_name
                    <<"  city: "<<this->city<<"  role: "<<this->role<<endl;
```

```
        }

};
char A::company_name[100]="Apple";
int main()
{
        int n;
        S s1;

        cout<<"how many student: ";
        cin>>n;

        for(int i=0;i<n;i++)
        {
                s1.set();
                s1.setdata();
                s1.setter();
        }
        for(int i=0;i<n;i++)
        {
                s1.getter();
                s1.get();
        }


        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.26.exe
how many student: 1
Enter id: 1
Enter name: jk
Enter age: 24
Enter role: manager
Enter salary: 12000
Enter experience (year): 2
Enter email: mjenil@
Enter city: surat
id: 1 role: manager salary: 12000
id: 1 name: jk age: 24 salary: 12000 experience: 2 email: mjenil@ company n
ame: Apple city: surat role: manager
Process exited after 21.41 seconds with return value 0
Press any key to continue . . .

Practical - 27

Aim-:27 Reserve Bank of India pre-defines a Rate of Interest (ROI) for all banks across the Nation. But some private sector banks can apply different ROI. Use inheritance and polymorphism concept to illustrate this scenario.

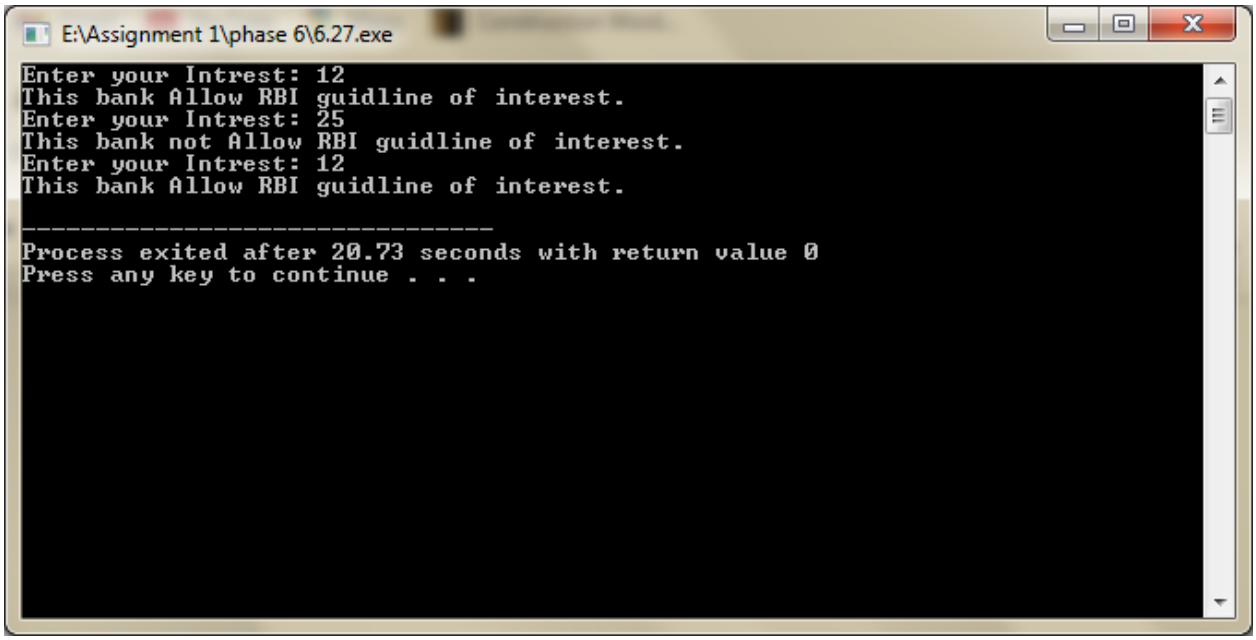
Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class RBI
{
        public:
                int intrest=12;
};
class Boi : public RBI
{
public:
        int i;
        void set()
        {
                cout<<"Enter your Intrest: ";
                cin>>this->i;
                if(this->i==this->intrest)
                {
                        cout<<"This bank Allow RBI guidline of interest."<<endl;
                }
                else
                {
                        cout<<"This bank not Allow RBI guidline of interest."<<endl;
                }
        }
};
class Bob : public RBI
{
   public:
```

```
        int a;
        void setter()
        {
                cout<<"Enter your Intrest: ";
                cin>>this->a;
                if(this->a==this->intrest)
                {
                        cout<<"This bank Allow RBI guidline of interest."<<endl;
                }
                else
                {
                        cout<<"This bank not Allow RBI guidline of interest."<<endl;
                }
        }

};
class Yes : public RBI
{
public:
   int b;
        void setdata()
        {
                cout<<"Enter your Intrest: ";
                cin>>this->b;
                if(this->b==this->intrest)
                {
                        cout<<"This bank Allow RBI guidline of interest."<<endl;
                }
                else
                {
                        cout<<"This bank not Allow RBI guidline of interest."<<endl;
                }
        }
};
int main()
{
        Boi bo1;
        Bob b1;
        Yes y1;
```

```
        bo1.set();
        b1.setter();
        y1.setdata();

        return 0;
}
```

Output:



Practical - 28

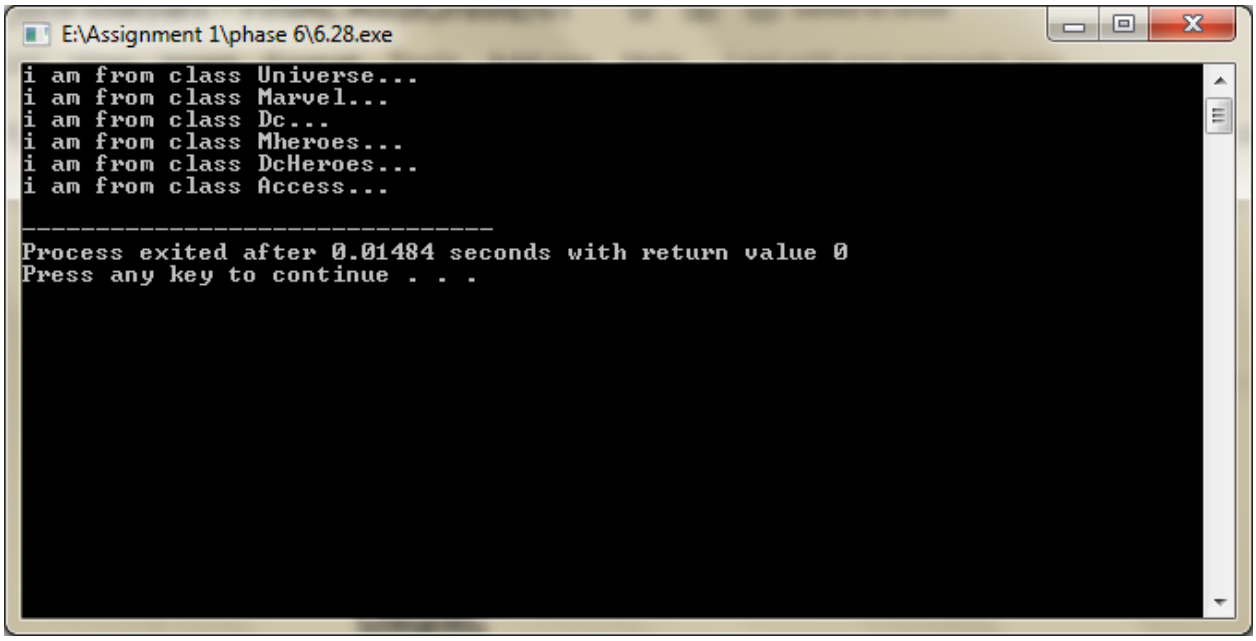
Aim-:28 One character is common in both Marvel & DC universes named "Access". Implement below mentioned structure using proper inheritance concept and with assumable fields and methods. You can create and use any type of methods and illustrations to enhance this program as per your preference.

Program:

```
#include<iostream>
#include<string.h>
using namespace std;

class Universe
{
    public:
    void get()
    {
        cout<<"i am from class Universe..."<<endl;
          }

};
class Marvel : public Universe
{
        public:
    void getter()
    {
        cout<<"i am from class Marvel..."<<endl;
          }
};
class Dc : public Universe
{
        public:
    void getter()
    {
        cout<<"i am from class Dc..."<<endl;
          }
```

```
};
class Mheroes : public Marvel
{
        public:
    void getter()
    {
        cout<<"i am from class Mheroes..."<<endl;
          }
};
class DcHeroes : public Dc
{
        public:
    void getter()
    {
        cout<<"i am from class DcHeroes..."<<endl;
          }
};
class Access : public Mheroes, public DcHeroes
{
        public:
    void getter()
    {
        cout<<"i am from class Access..."<<endl;
          }
};
int main()
{
        Access a1;
        a1.Marvel::get();
        a1.Marvel::getter();
        a1.Dc::getter();
        a1.Mheroes::getter();
        a1.DcHeroes::getter();
        a1.getter();


        return 0;
}
```

Output:


E:\Assignment 1\phase 6\6.28.exe
i am from class Universe...
i am from class Marvel...
i am from class Dc...
i am from class Mheroes...
i am from class DcHeroes...
i am from class Access...

Process exited after 0.01484 seconds with return value 0
Press any key to continue . . .