

TUTORIAL 8
ARSHITA 21115024 P2

Q1

```
#include<iostream>

using namespace std;

int add(int x,int y)
{
    int sum=x+y;
    return sum;
}

int multiply(int x,int y)
{
    int prod=x*y;
    return prod;
}

int subtract(int x,int y)
{
    int diff=x-y;
    return diff;
}

int main()
{
    int a,b;

    cout<<"Enter the integers"<<endl;
    cin>>a>>b;

    int(*ptr)(int,int);
    ptr=&add;

    cout<<"Addition: "<<ptr(a,b)<<endl;

    ptr=&multiply;

    cout<<"Multiplication: "<<ptr(a,b)<<endl;

    ptr=&subtract;
```

```

        cout<<"Subtraction: "<<ptr(a,b)<<endl;

        //using array of function pointers

        cout<<"Using Array of function pointers: "<<endl;

        int(*ptr1[3])(int,int)={add,multiply,subtract};

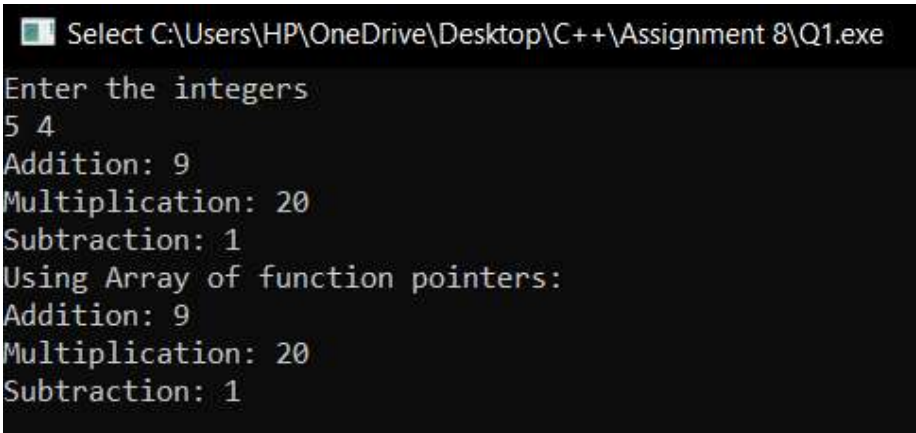
        cout<<"Addition: "<<ptr1[0](a,b)<<endl;

        cout<<"Multiplication: "<<ptr1[1](a,b)<<endl;

        cout<<"Subtraction: "<<ptr1[2](a,b)<<endl;

    }

```



```

Select C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q1.exe
Enter the integers
5 4
Addition: 9
Multiplication: 20
Subtraction: 1
Using Array of function pointers:
Addition: 9
Multiplication: 20
Subtraction: 1

```

Q2

```

#include<iostream>

using namespace std;

int square(int a)
{
    return a*a;
}

int cube(int b)
{
    return b*b*b;
}

int sum(int(*)(int),int);

int main()
{
    int n;

```

```

        cout<<"Enter maximum integer: ";

        cin>>n;

        cout<<"Sum of squares: "<<sum(square,n)<<endl;

        cout<<"Sum of cubes: "<<sum(cube,n);

    }

    sum(int(*pf)(int),int b)
    {

        int sum=0;

        for(int i=0;i<=b;i=i+2)

        {

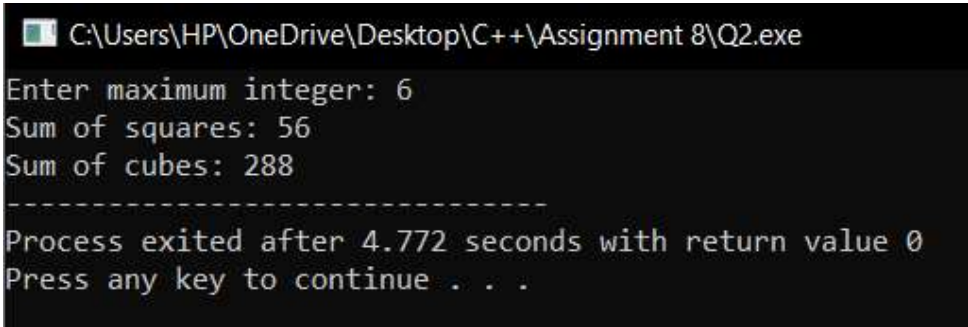
            sum=sum+(*pf)(i);

        }

        return sum;

    }

```



```

C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q2.exe
Enter maximum integer: 6
Sum of squares: 56
Sum of cubes: 288
-----
Process exited after 4.772 seconds with return value 0
Press any key to continue . . .

```

Q3

```

#include<iostream>

#include<cmath>

using namespace std;

class area
{

    double radius;

    double side1,side2;

    double a,b,c;

    public:

//for circle

```

```

area(double r)
{
    radius=r;
}

//for a rectangle
area(double s1,double s2)
{
    side1=s1;
    side2=s2;
}

//for triangle
area(double st1,double st2,double st3)
{
    a=st1;
    b=st2;
    c=st3;
}

//circle area function
void circle()
{
    double circleArea=(3.14)*radius*radius;
    cout<<"Area of circle: "<<endl;
    cout<<circleArea<<endl;
}

//rectangle area function
void rectangle()
{
    double rectarea=side1*side2;
    cout<<"Area of rectangle: "<<endl;
    cout<<rectarea;
}

```

```

//triangle area function
void triangle()
{
    double s=(a+b+c)/2;
    double v=s*(s-a)*(s-b)*(s-c);
    double triarea=sqrt(v);
    cout<<"Area of triangle: "<<endl;
    cout<<triarea<<endl;
}
};

int main()
{
    cout<<"Which figure's area do you want to find(select appropriate choices): Circle(1) Triangle(2)
    Rectangle(3)"<<endl;

    int ch;
    cin>>ch;
    if(ch==1)
    {
        cout<<"Enter radius of circle : ";
        int r;
        cin>>r;
        area s1(r);
        s1.circle();
    }
    if(ch==3)
    {
        cout<<"Enter sides of the rectangle : ";
        int a,b;
        cin>>a>>b;
        area s2(a,b);
        s2.rectangle();
    }
}

```

```

}

if(ch==2)
{
    cout<<"Enter sides of the triangle : ";

    int x,y,z;

    cin>>x>>y>>z;

    area s3(x,y,z);

    s3.triangle();
}
}

```

```

C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q3.exe
Which figure's area do you want to find(select appropriate choices): Circle(1) Triangle(2) Rectangle(3)
1
Enter radius of circle : 2
Area of circle:
12.56

```

```

C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q3.exe
Which figure's area do you want to find(select appropriate choices): Circle(1) Triangle(2) Rectangle(3)
2
Enter sides of the triangle : 4 3 5
Area of triangle:
6

```

```

C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q3.exe
Which figure's area do you want to find(select appropriate choices): Circle(1) Triangle(2) Rectangle(3)
3
Enter sides of the rectangle : 2 5
Area of rectangle:
10
-----

```

Q4

```

#include<iostream>

#include<string>

using namespace std;

class player
{
public:

int playnum;

string playname;

```

```

int nummatch;

int *arrayplayer;

player(int playnum,string playname,int nummatch)
{
    this->nummatch=nummatch;
    this->playname=playname;
    this->playnum=playnum;
    arrayplayer= new int[this->nummatch];
    for(int i=0;i<nummatch;i++)
    {
        cout<<"Enter number of goals for Match No. "<<i+1<<" : ";
        cin>>arrayplayer[i];
    }
}

void display()
{
    cout<<"Match Number"<<" " "<<"Number of Goals"<<endl;
    for(int i=0;i<nummatch;i++)
    {
        cout<<" " "<<i+1<<" " "<<" "<<arrayplayer[i]<<" "<<endl;
    }
}

~player()
{
    delete[]arrayplayer;
    arrayplayer=NULL;
}

};

int main()
{
    int playnum;

```

```

string playname;

int nummatch;

cout<<"Enter player number"<<endl;

cin>>playnum;

cout<<"Enter player name"<<endl;

cin>>playname;

cout<<"Enter player's number of matches"<<endl;

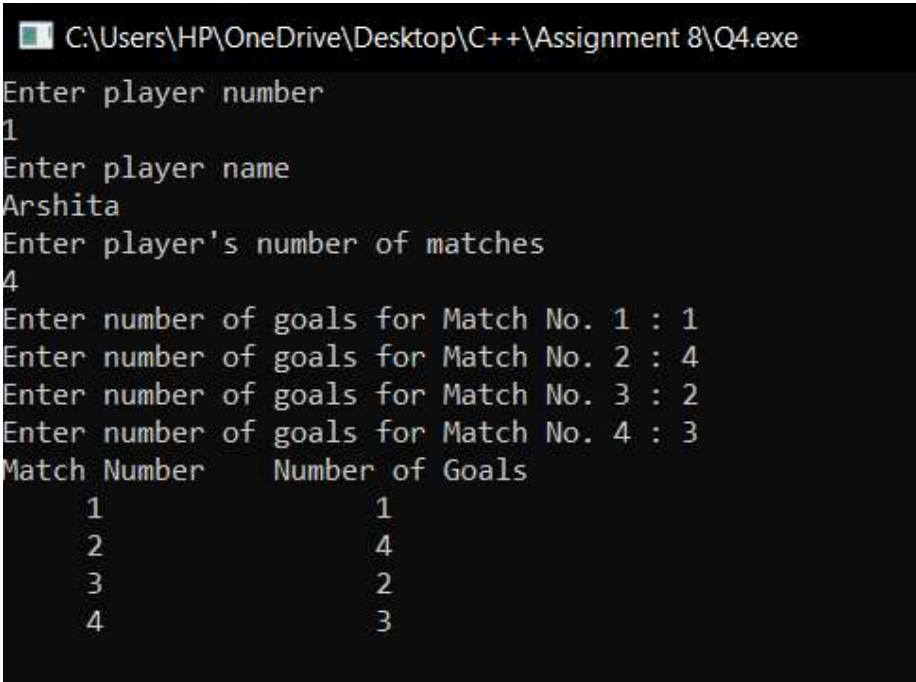
cin>>nummatch;

player p1(playnum,playname,nummatch);

p1.display();

}

```



The screenshot shows a Windows command prompt window titled "C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q4.exe". The program prompts the user for player information and match goals. The user enters '1' for player number, 'Arshita' for player name, and '4' for the number of matches. Then, the program asks for the number of goals for each of the 4 matches, with the user entering 1, 4, 2, and 3 respectively. Finally, the program displays a table of the match data.

```

Enter player number
1
Enter player name
Arshita
Enter player's number of matches
4
Enter number of goals for Match No. 1 : 1
Enter number of goals for Match No. 2 : 4
Enter number of goals for Match No. 3 : 2
Enter number of goals for Match No. 4 : 3
Match Number      Number of Goals
    1                1
    2                4
    3                2
    4                3

```

Q5

```

#include<iostream>

using namespace std;

class pascal
{
private:
int n;

```


public:

void setvalue(int n)

{

this->n=n;

}

int bincoeff(int n,int k)

{

int f=1;

if(k>n-k)

{

k=n-k;

}

for(int i=0;i<k;i++)

{

f=f*(n-i);

f=f/(i+1);

}

return f;

}

friend void pascalseries(pascal);

};

void pascalseries(pascal h)

{

h.n=h.n-1;

cout<<1<<endl;

for(int i=1;i<=h.n;i++)

{

cout<<1<<" ";

for(int j=1;j<=i;j++)

{

cout<<h.bincoeff(i,j)<<" ";

```
C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q5.exe
Enter number of rows for pascal triangle :
10
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
1 6 15 20 15 6 1
1 7 21 35 35 21 7 1
1 8 28 56 70 56 28 8 1
1 9 36 84 126 126 84 36 9 1
-----
```

```
#include<iostream>

using namespace std;

//fibonacci series

//friend functions

class fibonacci

{
```

```

private:
int n;
int c1=0;
int c2=1;
public:
    void setvalue(int n)
    {
        this->n=n;
    }
int operator+()
{
    return (c1+c2);
}
friend void fibbfunc(fibonacci);
};
void fibbfunc(fibonacci h)
{
    cout<<h.c1<<" "<<h.c2<<" ";
    for(int i=3;i<=h.n;i++)
    {
        int c3=h.c1+h.c2;
        cout<<c3<<" ";
        int f=h.c2;
        h.c2=c3;
        h.c1=f;
    }
}

int main()
{
    int n;

```

```

        cout<<"Enter number of elements in series : "<<endl;

        cin>>n;

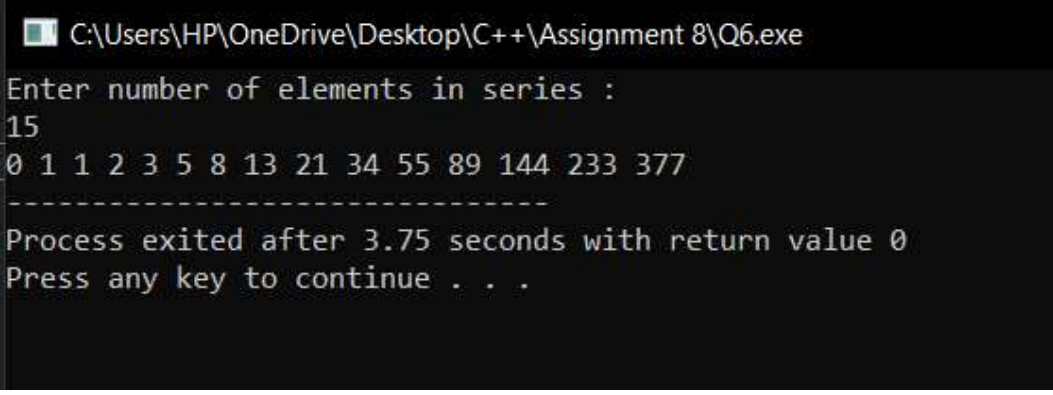
        fibonacci b1;

        b1.setvalue(n);

        fibbfunc(b1);

    }

```



```

C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q6.exe
Enter number of elements in series :
15
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377
-----
Process exited after 3.75 seconds with return value 0
Press any key to continue . . .

```

Q7

```

#include<iostream>

#include<string>

using namespace std;

class strings
{
    string sm;

    string s1;

    string s2;

    string sc1;

    string sc2;

    public:

    void setstring1(string input)
    {
        sm=input;
    }

    void display()
    {

```

```

        cout<<sm<<endl;
    }
    void setstring2(string ss1,string ss2)
    {
        s1=ss1;
        s2=ss2;
    }
    void check()
    {
        if(s1==s2)
        {
            cout<<"true"<<endl;
        }
        else
        {
            cout<<"false"<<endl;
        }
    }
    void setstring3(string ssc1,string ssc2)
    {
        sc1=ssc1;
        sc2=ssc2;
    }
    void concat()
    {
        string c=sc1+sc2;
        cout<<c<<endl;
    }
};

```

```

int main()

```

```

{
    string s;

    cout<<"Enter the string: ";

    cin>>s;

    strings s1;

    s1.setstring1(s);

    s1.display();

    cout<<"Comparing two strings: "<<endl;

    cout<<"Enter string 1: ";

    string string1;

    cin>>string1;

    cout<<"Enter string 2: ";

    string string2;

    cin>>string2;

    strings s2;

    s2.setstring2(string1,string2);

    s2.check();

    cout<<"Concatinating two strings: "<<endl;

    cout<<"Enter string 1: ";

    string stringg1;

    cin>>stringg1;

    cout<<"Enter string 2: ";

    string stringg2;

    cin>>stringg2;

    strings s3;

    s3.setstring3(stringg1,stringg2);

    s3.concat();

    return 0;
}

```

```
C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q7.exe
Enter the string: arshita
arshita
Comparing two strings:
Enter string 1: arshita
Enter string 2: dawra
false
Concatinating two strings:
Enter string 1: arshita
Enter string 2: dawra
arshitadawra
-----
```

Q8

```
#include<iostream>

using namespace std;

class node
{
public:
    int data;
    node* next;
    //constructor
    node(int val)
    {
        data=val;
        next=NULL;
    }
};

void insertAtTail(node* &head,int val)
{
    //forming a new node
    node* n=new node(val);
    if(head==NULL)
    {
```

```

        head=n;
        return;
    }
    node* temp=head;
    //traversing to end
    while(temp->next!=NULL)
    {
        temp=temp->next;
    }
    temp->next=n;
}

void display(node*head)
{
    //displaying the list
    node*temp=head;
    while(temp!=NULL)
    {
        cout<<temp->data<<" ";
        temp=temp->next;
    }
    cout<<endl;
}

void ascendingsorting(node* head)
{
    node *i;
    node *j;
    for(i=head;i!=NULL;i=i->next)
    {
        for(j=i->next;j!=NULL;j=j->next)
        {
            if((i->data)>(j->data))

```



```

        {
            int c=i->data;
            i->data=j->data;
            j->data=c;
        }
    }
}

void descendingsorting(node* head)
{
    node *i;
    node *j;
    for(i=head;i!=NULL;i=i->next)
    {
        for(j=i->next;j!=NULL;j=j->next)
        {
            if((i->data)<(j->data))
            {
                int c=i->data;
                i->data=j->data;
                j->data=c;
            }
        }
    }
}

int main()
{
    //creating empty list
    node* head=NULL;

    cout<<"Enter number of elements: ";

    int g;

```

```

cin>>g;
for(int i=1;i<=g;i++)
{
    cout<<"Enter element "<<i<<" : ";

    int n;

    cin>>n;

    insertAtTail(head,n);
}

//displaying original linked list
display(head);

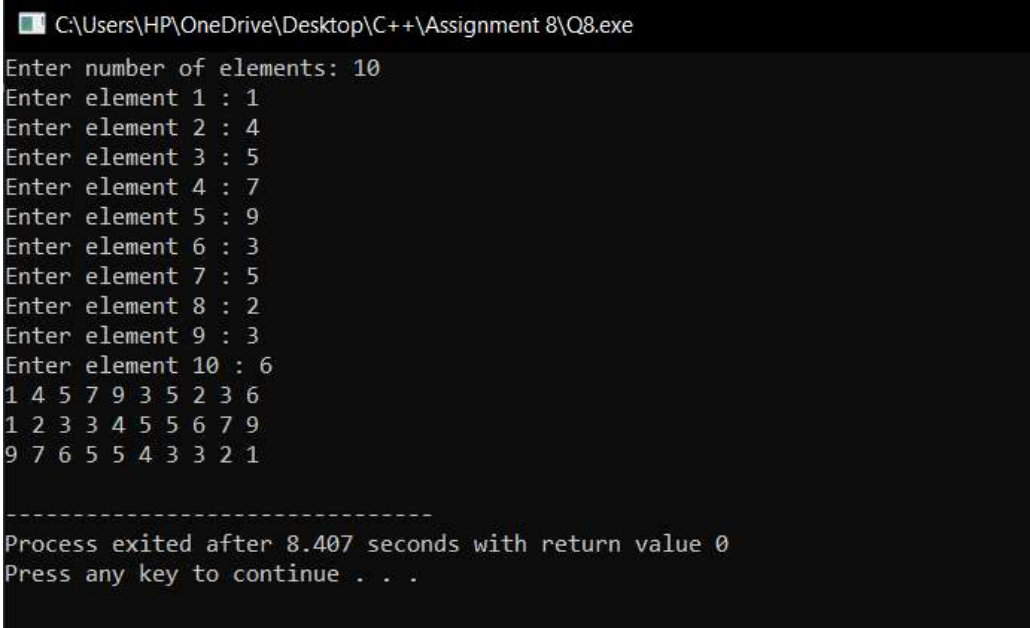
//sorting in ascending order
ascendingsorting(head);

//displaying sorted list
display(head);

//sorting in descending order
descendingsorting(head);

//displaying sorted list
display(head);
}

```



The screenshot shows a Windows command prompt window titled "C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q8.exe". The program prompts the user to enter the number of elements (10) and then enters 10 elements: 1, 4, 5, 7, 9, 3, 5, 2, 3, 6. It then displays the original linked list, followed by the list after ascending sorting (1 2 3 3 4 5 5 6 7 9), and finally the list after descending sorting (9 7 6 5 5 4 3 3 2 1). The program exits after 8.407 seconds with a return value of 0.

```

C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q8.exe
Enter number of elements: 10
Enter element 1 : 1
Enter element 2 : 4
Enter element 3 : 5
Enter element 4 : 7
Enter element 5 : 9
Enter element 6 : 3
Enter element 7 : 5
Enter element 8 : 2
Enter element 9 : 3
Enter element 10 : 6
1 4 5 7 9 3 5 2 3 6
1 2 3 3 4 5 5 6 7 9
9 7 6 5 5 4 3 3 2 1

-----
Process exited after 8.407 seconds with return value 0
Press any key to continue . . .

```

Q9

```
#include<iostream>

#include<string>

using namespace std;

//using multiple inheritance

class decimal
{
public:
int n;
void setValue(int n)
{
    this->n=n;
}
};

class binary
{
public:
int c;
string str;
void convert(int n)
{
    str="";
    if(n==0)
    {
        str="0";
    }
    else
    {
        while(n>0)
        {
            c=n%2;
```

```

        n=n/2;
        if(c==1)
        {
            str="1"+str;
        }
        else
        {
            str="0"+str;
        }
    }
}
};

class derived: public decimal, public binary
{
public:
    void print()
    {
        cout<<"The decimal number was: "<<n<<endl;
        cout<<"The binary conversion of the number is: "<<str<<endl;
    }
};

int main()
{
    int n;

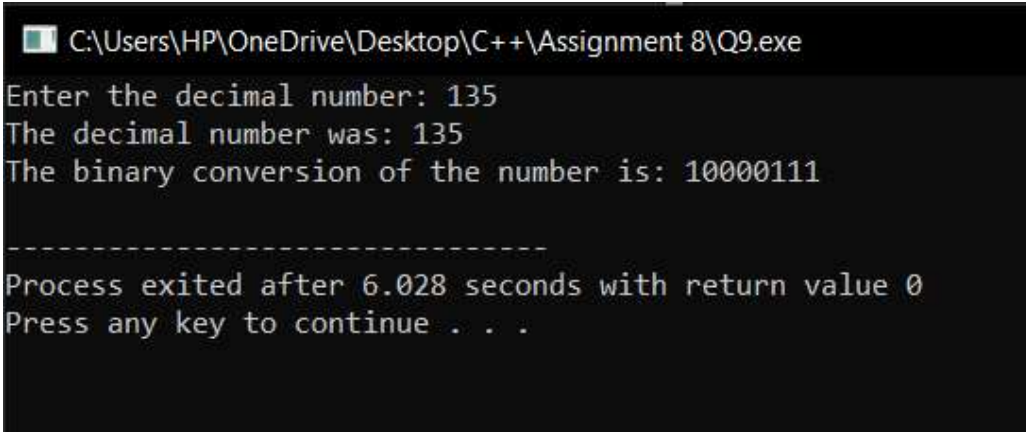
    cout<<"Enter the decimal number: ";

    cin>>n;

    derived a1;
    a1.setValue(n);
    a1.convert(n);
    a1.print();
}

```

}



```
C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q9.exe
Enter the decimal number: 135
The decimal number was: 135
The binary conversion of the number is: 10000111

-----
Process exited after 6.028 seconds with return value 0
Press any key to continue . . .
```

Q10

```
#include<iostream>

using namespace std;

class oddNum
{
public:
    int n;
    void setValue()
    {
        cout<<"Enter number of odd numbers you want to display: ";
        cin>>n;
    }
};

class sum
{
public:
    int sum;
    void sumcalc(int n)
    {
        sum=0;
        int f=1;
```

```

for(int i=1;f<=n;i=i+2)
{
    sum=sum+i;
    f++;
}
};

class display
{
public:
void displayNum(int n)
{
int f=1;
for(int i=1;f<=n;i=i+2)
{
    cout<<i<<" ";
    f++;
}
};

class derived:public sum, public display,public oddNum
{
public:
void sumdisplay(void)
{
cout<<"The sum of odd integers upto "<<n<<" is: "<<sum<<endl;
}
};

int main()
{
derived a1;

```

```

a1.setValue();

int v=a1.n;

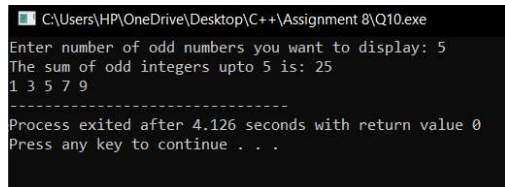
a1.sumcalc(v);

a1.sumdisplay();

a1.displayNum(v);

}

```



```

C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q10.exe
Enter number of odd numbers you want to display: 5
The sum of odd integers upto 5 is: 25
1 3 5 7 9
-----
Process exited after 4.126 seconds with return value 0
Press any key to continue . . .

```

Q11

```

#include<iostream>

#include<cmath>

using namespace std;

class fixDeposit
{
protected:

int accno;// account number

protected:

double amount;// principal amount

public:

fixDeposit(int a, double p)

{

accno = a;

amount = p;

}

public:

double interest()

{

cout << "The member function in fixDeposit";

return 0;

```

```

}

public:
void update(double d)
{
    amount += d;
}

public:
void display()
{
    cout<<"The member function in fixDeposit";
}

};

class SIdeposit: public fixDeposit
{
public:
    double rateinterest;
    int timeyears;
    double interestSI;
    SIdeposit(int a,double b,double c,int d):fixDeposit(a,b)
    {
        rateinterest=c;
        timeyears=d;
    }
    double interest()
    {
        interestSI=(amount*rateinterest*timeyears)/100;
        return interestSI;
    }
    void update()
    {
        amount += interestSI;
    }
}

```



```
}
```

```
void display()
```

```
{
```

```
    cout<<"Updated Amount: "<<amount<<endl;
```

```
}
```

```
};
```

```
class CIdeposit: public fixDeposit
```

```
{
```

```
public:
```

```
double rateinterest;
```

```
int timeyears;
```

```
double interestCI;
```

```
CIdeposit(int a,double b,double c,int d):fixDeposit(a,b)
```

```
{
```

```
    rateinterest=c;
```

```
    timeyears=d;
```

```
}
```

```
double interest()
```

```
{
```

```
    interestCI=amount*(pow(1+(rateinterest/100),timeyears))-amount;
```

```
    return interestCI;
```

```
}
```

```
void update()
```

```
{
```

```
    amount += interestCI;
```

```
}
```

```
void display()
```

```
{
```

```

        cout<<"Updated Amount: "<<amount<<endl;
    }
};

int main()
{
    cout<<"Enter account number: ";

    int a;

    cin>>a;

    cout<<"Enter principle amount: ";

    int b;

    cin>>b;

    cout<<"Enter yearly rate of interest for SI: ";

    int c1;

    cin>>c1;

    cout<<"Enter time period of deposit in number of years: ";

    int d1;

    cin>>d1;

    cout<<"Enter yearly rate of interest for CI: ";

    int c2;

    cin>>c2;

    cout<<"Enter time period of deposit in number of years: ";

    int d2;

    cin>>d2;

    SIdeposit u1(a,b,c1,d1);

    SIdeposit * SIptr;

    SIptr=&u1;

    cout<<"The SI is: "<<SIptr->interest()<<endl;

    SIptr->update();

    SIptr->display();

    CIdeposit u2(a,b,c2,d2);

    CIdeposit * CIptr;

```

```

        Clptr=&u2;

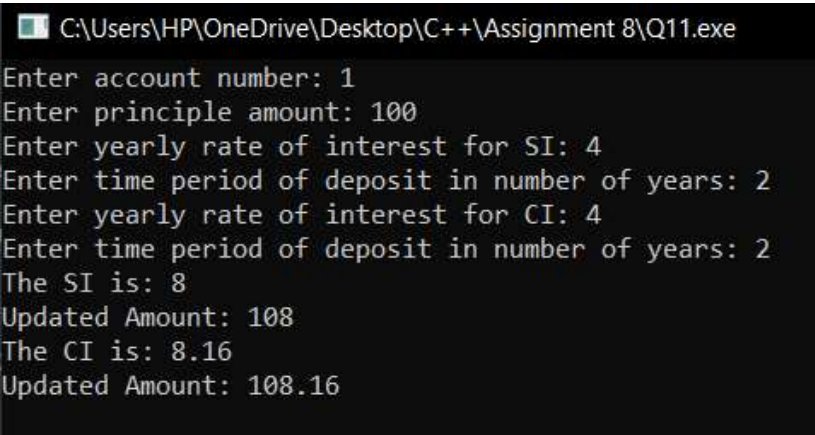
        cout<<"The CI is: "<<Clptr->interest()<<endl;

        Clptr->update();

        Clptr->display();

    }

```



A screenshot of a Windows command prompt window titled "C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q11.exe". The window shows the execution of a C++ program. The user enters the following inputs: account number 1, principle amount 100, yearly rate of interest for SI 4, time period of deposit in years 2, yearly rate of interest for CI 4, and time period of deposit in years 2. The program outputs: "The SI is: 8", "Updated Amount: 108", "The CI is: 8.16", and "Updated Amount: 108.16".

```

C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q11.exe
Enter account number: 1
Enter principle amount: 100
Enter yearly rate of interest for SI: 4
Enter time period of deposit in number of years: 2
Enter yearly rate of interest for CI: 4
Enter time period of deposit in number of years: 2
The SI is: 8
Updated Amount: 108
The CI is: 8.16
Updated Amount: 108.16

```

Q12

```

#include<iostream>

#include<cmath>

using namespace std;

class fixDeposit
{
public:
    static int accno;// account number
protected:
    double amount;// principal amount
public:
    fixDeposit(double p)
    {
        amount = p;
    }
public:
    double interest()
    {

```

```

cout << "The member function in fixDeposit";
return 0;
}
public:
void update(double d)
{
amount += d;
}
public:
void display()
{
cout<<"The member function in fixDeposit";
}
};
int fixDeposit::accno;
class SIdeposit: public fixDeposit
{
public:
double rateinterest;
int timeyears;
double interestSI;
SIdeposit(double b,double c,int d):fixDeposit(b)
{
    rateinterest=c;
    timeyears=d;
}
double interest()
{
    interestSI=(amount*rateinterest*timeyears)/100;
    return interestSI;
}

```

```

void update()
{
    amount += interestSI;
}

void display()
{
    cout<<"Updated Amount: "<<amount<<endl;
}

};

class CIdeposit: public fixDeposit
{
public:
    double rateinterest;
    int timeyears;
    double interestCI;
    CIdeposit(double b,double c,int d):fixDeposit(b)
    {
        rateinterest=c;
        timeyears=d;
    }
    double interest()
    {
        interestCI=amount*(pow(1+(rateinterest/100),timeyears))-amount;
        return interestCI;
    }
    void update()
    {
        amount += interestCI;
    }

```

```

void display()
{
    cout<<"Updated Amount: "<<amount<<endl;
}

};

int main()
{
    cout<<"Enter number of account numbers: ";
    int f;
    cin>>f;
    for(int i=1;i<=f;i++)
    {
        cout<<"Enter principle amount: ";
        int b;
        cin>>b;
        cout<<"Enter yearly rate of interest for SI: ";
        int c1;
        cin>>c1;
        cout<<"Enter time period of deposit in number of years: ";
        int d1;
        cin>>d1;
        cout<<"Enter yearly rate of interest for CI: ";
        int c2;
        cin>>c2;
        cout<<"Enter time period of deposit in number of years: ";
        int d2;
        cin>>d2;
        SIdeposit u1(b,c1,d1);
        cout<<"Account number: "<<u1.accno<<endl;
        SIdeposit * SIptr;
    }
}

```

```
    SIptr=&u1;
    cout<<"The SI is: "<<SIptr->interest()<<endl;
    SIptr->update();
    SIptr->display();
    Cldeposit u2(b,c2,d2);
    cout<<"Account number: "<<u2.accno<<endl;
    Cldeposit * Clptr;
    Clptr=&u2;
    cout<<"The CI is: "<<Clptr->interest()<<endl;
    Clptr->update();
    Clptr->display();
}
}
```

```
C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q12.exe
Enter number of account numbers: 2
Enter principle amount: 100
Enter yearly rate of interest for SI: 4
Enter time period of deposit in number of years: 2
Enter yearly rate of interest for CI: 4
Enter time period of deposit in number of years: 2
Account number: 1
The SI is: 8
Updated Amount: 108
Account number: 2
The CI is: 8.16
Updated Amount: 108.16
Enter principle amount: 100
Enter yearly rate of interest for SI: 6
Enter time period of deposit in number of years: 3
Enter yearly rate of interest for CI: 6
Enter time period of deposit in number of years: 3
Account number: 3
The SI is: 18
Updated Amount: 118
Account number: 4
The CI is: 19.1016
Updated Amount: 119.102

-----
Process exited after 13.77 seconds with return value 0
Press any key to continue . . .
```

Q13

```
#include<iostream>

#include<cmath>

using namespace std;

class fixDeposit
{
protected:
int accno;// account number

protected:
double amount;// principal amount

public:
```



```

fixDeposit(int a, double p)
{
    accno = a;
    amount = p;
}

public:
virtual double interest()
{
    cout << "The member function in fixDeposit";
    return 0;
}

public:
void update(double d)
{
    amount += d;
}

public:
virtual void display()
{
    cout<<"The member function in fixDeposit";
}

};

class SIdeposit: public fixDeposit
{
public:
    double rateinterest;
    int timeyears;
    double interestSI;
    SIdeposit(int a,double b,double c,int d):fixDeposit(a,b)
    {
        rateinterest=c;
    }
}

```

```

        timeyears=d;
    }
    double interest()
    {
        interestSI=(amount*rateinterest*timeyears)/100;
        return interestSI;
    }
    void display()
    {
        update(interestSI);
        cout<<"Updated Amount: "<<amount<<endl;
    }
};

class CIdeposit: public fixDeposit
{
public:
    double rateinterest;
    int timeyears;
    double interestCI;
    CIdeposit(int a,double b,double c,int d):fixDeposit(a,b)
    {
        rateinterest=c;
        timeyears=d;
    }
    double interest()
    {
        interestCI=amount*(pow(1+(rateinterest/100),timeyears))-amount;
        return interestCI;
    }
    void display()
    {

```

```

        update(interestCI);
    cout<<"Updated Amount: "<<amount<<endl;
}
};

int main()
{
    cout<<"Enter account number: ";

    int a;

    cin>>a;

    cout<<"Enter principle amount: ";

    int b;

    cin>>b;

    cout<<"Enter yearly rate of interest for SI: ";

    int c1;

    cin>>c1;

    cout<<"Enter time period of deposit in number of years: ";

    int d1;

    cin>>d1;

    cout<<"Enter yearly rate of interest for CI: ";

    int c2;

    cin>>c2;

    cout<<"Enter time period of deposit in number of years: ";

    int d2;

    cin>>d2;

    SIdeposit u1(a,b,c1,d1);

    fixDeposit * SIptr;

    SIptr=&u1;

    cout<<"The SI is: "<<SIptr->interest()<<endl;

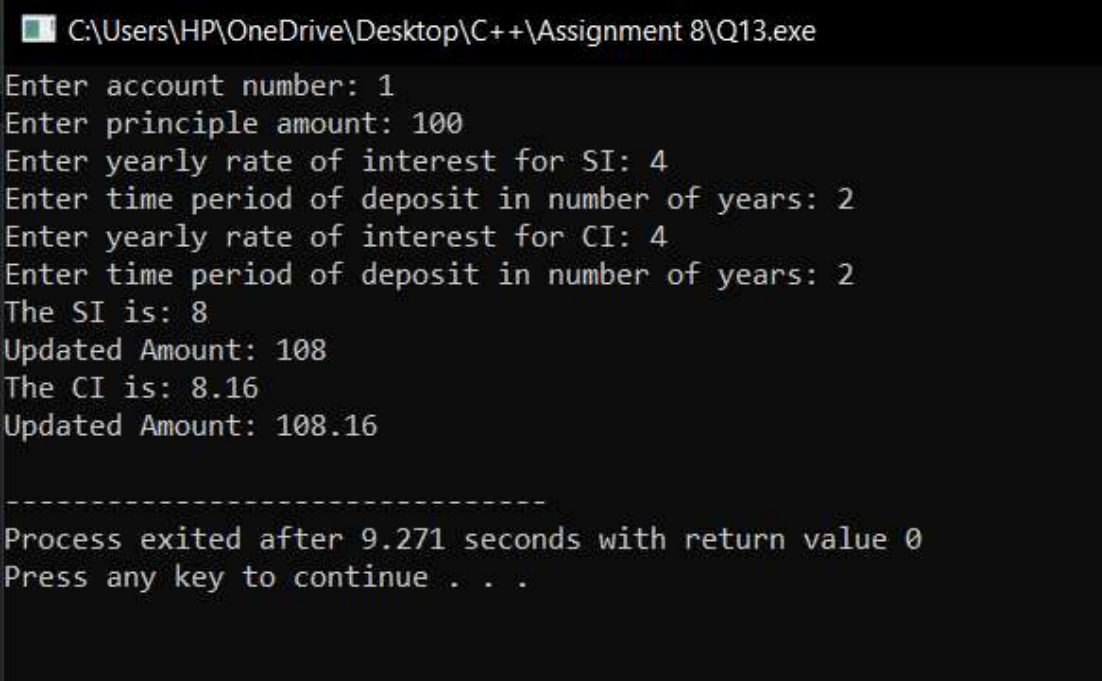
    SIptr->display();

    CIdeposit u2(a,b,c2,d2);

    fixDeposit * CIptr;

```

```
    Clptr=&u2;  
    cout<<"The CI is: "<<Clptr->interest()<<endl;  
    Clptr->display();  
}
```



```
C:\Users\HP\OneDrive\Desktop\C++\Assignment 8\Q13.exe  
Enter account number: 1  
Enter principle amount: 100  
Enter yearly rate of interest for SI: 4  
Enter time period of deposit in number of years: 2  
Enter yearly rate of interest for CI: 4  
Enter time period of deposit in number of years: 2  
The SI is: 8  
Updated Amount: 108  
The CI is: 8.16  
Updated Amount: 108.16  
  
-----  
Process exited after 9.271 seconds with return value 0  
Press any key to continue . . .
```

Yes the results remain same.

In one case we use pointer to derived class.

In one case we use pointer of base class, by making functions of base class virtual.