

# ASSIGNMENT – 5

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SLOT: L31+L32+L49+L50

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Write a program to print the area of a rectangle by creating a class named 'Area' having two functions. First function named as 'setDim' takes the length and breadth of the rectangle as parameters and the second function named as 'getArea' returns the area of the rectangle. Length and breadth of the rectangle are entered through keyboard.

CODE:

```
#include <iostream>
using namespace std;
class Area
{
private:
    float length,breadth;
public:
    void setDim(float a,float b)
    {
        length=a;
        breadth=b;
    }
    void getArea()
    {
        float res = length*breadth;
        cout<<"Area of triangle:"<<res;
    }
};
int main()
{
    float x,y;
    Area obj;
    cout<<"Enter length:"; cin>>x;
    cout<<"Enter breadth:"; cin>>y;
    obj.setDim(x,y);
    obj.getArea();
}
```

## OUTPUT:

```
/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT
↳ cd "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/" && g++ ex-1.cpp -o ex-1 && "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/"ex-1
Enter length:4.5
Enter breadth:2.9
Area of triangle:13.05%
/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT
↳ cd "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/" && g++ ex-1.cpp -o ex-1 && "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/"ex-1
Enter length:5.77
Enter breadth:2.33
Area of triangle:13.4441%
```

Define a class to represent a bank account. Include the following members.

Data Members:

Name of the depositor

Account Number

Type of Account

Balance amount in the account

Member Functions:

To assign initial values

To deposit an amount

To withdraw an amount after checking the balance

To display name and balance

Write the main program to test the program.

## CODE:

```
#include <iostream>
using namespace std;
class bank
{
private:
    string name;
    int acc_no;
    string type;
    float bal;
public:
    bank(string a,int b,string c,float d)
    {
        name = a;
        acc_no = b;
        type = c;
        bal = d;
    }
    void deposit(float x)
    {
        bal=bal+x;
        cout<<"New balance:"<<bal<<"\n";
    }
    void withdraw(float y)
    {
        cout<<"Current balance:"<<bal;
        bal=bal-y;
        cout<<"\nBalance after withdrawal:"<<bal;
    }
    void display()
    {
        cout<<"\nName:"<<name<<"\n";
        cout<<"Balance:"<<bal<<"\n";
    }
};
```

```
int main()
{
    string p,r;
    int q;
    float s;
    cout<<"Enter name:"; cin>>p;
    cout<<"Enter account no:"; cin>>q;
    cout<<"Enter type:"; cin>>r;
    cout<<"Enter balance:"; cin>>s;
    float a,b;
    bank obj(p,q,r,s);
    cout<<"Enter amount to deposit:";
    cin>>a;
    obj.deposit(a);
    cout<<"Enter amount to withdraw:";
    cin>>b;
    obj.withdraw(b);
    obj.display();
}
```

## OUTPUT:

```
/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT
↳ cd "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/" && g++ ex-2.cpp -o ex-2 && "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/"ex-2
Enter name:sanjaii
Enter account no:1234
Enter type:student
Enter balance:3000
Enter amount to deposit:100
New balance:3100
Enter amount to withdraw:200
Current balance:3100
Balance after withdrawal:2900
Name:sanjaii
Balance:2900
```

Write a C++ program to find the perfect numbers within a given range using classes and objects. A number whose sum of “factors” is equal to the number itself is called perfect number

CODE:

```
#include <iostream>
using namespace std;
class perfect
{
public:
    int x,y;
    perfect(int a,int b)
    {
        x = a;
        y = b;
    }
    void func()
    {
        for (int i=x+1;i<y;i++)
        {
            int key=0;
            cout<<i<<"is ";
            for (int j=1;j<=100;j++)
            {
                if (i%j==0 && i!=j)
                {
                    key=key+j;
                }
            }
            if (key==i) cout<<"Perfect number"<<"\n";
            else cout<<"Not a perfect number"<<"\n";
        }
    }
};
```

```
int main()
{
    int a,b;
    cout<<"enter lower limit:"; cin>>a;
    cout<<"enter upper limit:"; cin>>b;
    perfect obj(a,b);
    obj.func();
}
```

## OUTPUT:

```
/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT
↳ cd "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/" && g++ ex-3.cpp -o e
x-3 && "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/"ex-3
enter lower limit:1
enter upper limit:7
2 is Not a perfect number
3 is Not a perfect number
4 is Not a perfect number
5 is Not a perfect number
6 is Perfect number
```

Write a program in C++ to find the sum of the series by using the constructor and destructor.

CODE:

```
#include <iostream>
using namespace std;
class series
{
public:
    int sum;
    series()
    {
        int num;
        sum=0;
        cout<<"Enter no of elements in the series:";
        cin>>num;
        for (int i=0;i<num;i++)
        {
            int el;
            cout<<"Enter a number:";
            cin>>el;
            sum+=el;
        }
        cout<<"Sum of given series:"<<sum;
    }
    ~series()
    {
        sum=0;
    }
};
int main()
{
    series obj;
```

## OUTPUT:

```
/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT
↳ cd "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/" && g++ ex-4.cpp -o ex-4 && "/Users/vijayakumarmuthusamy/COLLEGE/PROGRAMMING/github/CPP_PROBLEMS_VIT/"ex-4
Enter no of elements in the series:6
Enter a number:10
Enter a number:20
Enter a number:30
Enter a number:40
Enter a number:50
Enter a number:60
Sum of given series:210%
```