

LAB - 5

Q1. Wap to find area of circle, square, rectangle & triangle by using function overloading.

```
#include <iostream>
using namespace std;
int area(int);
int area(int, int);
float area(float);
float area(float, float);
int main()
{
    int r, l, b;
    float r, b, ht;
    cout << "Enter radius of circle:";
    cin >> r;
    cout << "Enter side of a square:";
    cin >> r;
    cout << "Enter length and breadth of rectangle:";
    cin >> l >> b;
    cout << "Enter base and height of triangle:";
    cin >> b >> ht;

    cout << "\nArea of circle is " << area(r);
    cout << "\nArea of square is " << area(r);
    cout << "\nArea of rectangle is " << area(l, b);
    cout << "\nArea of triangle is " << area(b, ht);
}
int area(int r)
{
    return (r * r);
}
int area(int l, int b)
{
    return (l * b);
}
float area(float r)
{
    return (3.14 * r * r);
}
float area(float b, float ht)
{
    return ((b * ht) / 2);
}
```

```
Enter radius of circle:21
Enter side of a square:4
Enter length and breadth of rectangle:10 20
Enter base and height of triangle:10 15

Area of circle is 1384.74
Area of square is16
Area of rectangle is 200
Area of triangle is 75
```

Q2. Wap to count how many objects created.

```
#include <iostream>
#include <string.h>
```

```

using namespace std;
class msg
{
private:
    char str[30];
    static int count;
public:
    msg()
    {
        count++;
    }
    void initialmsg(char s[])
    {
        strcpy(str, s);
    }
    void prtmeg(void)
    {
        cout << str << endl;
    }
    static int totalObjects(void)
    {
        return count;
    }
};

int msg::count = 0;
int main()
{
    msg m1;
    msg m2;
    msg m3;
    msg m4;

    m1.initialmsg("Message one");
    m2.initialmsg("Message two");
    m3.initialmsg("Message three");
    m4.initialmsg("Message four");

    m1.prtmeg();
    m2.prtmeg();
    m3.prtmeg();
    m4.prtmeg();

    cout << "Total objects created:" << msg::totalObjects() << endl;

    return 0;
}

```

```

Message one
Message two
Message three
Message four
Total objects created: 4

```

Q3. Wap to add two no using friend function

```

#include <iostream>
#include <conio.h>

```

```

using namespace std;
class temp
{
    int a, b, add;
public:
    void input()
    {
        cout << "Enter the value of x and y:";
        cin >> a >> b;
    }
    friend void add(temp &t);
    void display()
    {
        cout << "The sum is : " << add;
    }
};
void add(temp &t)
{
    t.add = t.a + t.b;
}
int main()
{
    temp t1;
    t1.input();
    add(t1);
    t1.display();
    return 0;
}

```

```

Enter the value of x and y:15 12
The sum is :27

```

Q4. Wap to find GCD of two no of two different class by using friend function.

```

#include <iostream>
using namespace std;
class A
{
public:
    int x = 10;
    friend class B;
};
class B
{
public:
    int y = 20;
    friend class A;
    int gcd(A &ob)
    {
        int hcf, i;
        for (i = 1; i <= ob.x && i <= y; i++)
        {
            if (ob.x % i == 0 && y % i == 0)
            {
                hcf = i;
            }
        }
    }
}

```

```

        cout << "GCD of 10 & 20:" << hcf;
    }
}
int main()
{
    A ob1;
    B ob;
    obgcd(ob1);
    return 0;
}

```

```
GCD of 10 & 20 :10
```

Q5. Wap to create a class which accept two no and display it by using static data member and static member function.

```

#include <iostream>
using namespace std;
class Five
{
private:
    static int X, Y;
public:
    static void fun()
    {
        cout << "Enter Value of X" << endl;
        cin >> X;
        cout << "Value of X:" << X << endl;
        cout << "Enter Value of Y" << endl;
        cin >> Y;
        cout << "Value of Y:" << Y << endl;
    }
}
int Five::X = 10;
int Five::Y = 10;
int main()
{
    Five X;
    X.fun();
    return 0;
}

```

```

Enter Value of X
13
Value of X: 13
Enter Value of Y
24
Value of Y: 24

```

Q6. Wap to create a Telephone class. Which has two data member name and phno. And one function search, which will accept name and display person phono no and same function accept phono and returns name by using function over loading.

```

#include <iostream>
#include <conio.h>
#include <string.h>
using namespace std;
class Telephone
{
public:
    int no, mob;

```

```

char name[10];
void acc()
{
    cout << "\nEnter Person no: ";
    cin >> no;
    cout << "\nEnter Person name: ";
    cin >> name;
    cout << "\nEnter Person mob no: ";
    cin >> mob;
}
void acc(char nme[])
{
    if (strcmp(nme, name) == 0)
    {
        cout << "\n Person name : " << name;
        cout << "\n Person mob no: " << mob << endl;
    }
}
void acc(int mno)
{
    if (mno == mob)
    {
        cout << "\n Person name : " << name;
        cout << "\n Person mob no: " << mob << endl;
    }
}
void dis()
{
    cout << "\n Person details " << endl;
    cout << "\n Person no : " << no;
    cout << "\n Person name : " << name;
    cout << "\n Person mob no: " << mob << endl;
}
}
int main()
{
    char nme[10];
    int mno, i, no, ch;
    do
    {
        cout << "1. Accept Person details \n";
        cout << "2. Display Person details \n";
        cout << "3. To search the mobile number of a given Person \n";
        cout << "4. To search the Person details of a given mobile number \n";
        cout << "5. Exit \nEnter your choice :- ";
        cin >> ch;
        switch (ch)
        {
            case 1:
                cout << "Enter how many Person Details you want to enter: ";
                cin >> no;
                Telephone p[20];
                for (i = 0; i < no; i++)
                {
                    p[i].acc();
                }
            }
        }
    } while (ch != 5);
}

```

```

    }
    break;
case 2:
    for (i = 0; i < no; i++)
        p[i].dis();
    break;
case 3:
    cout << "\nEnter Person name search for mob no: ";
    cin >> nme;
    for (i = 0; i < no; i++)
        p[i].acc(nme);
    break;
case 4:
    cout << "\nEnter mob no search for Person name: ";
    cin >> mno;
    for (i = 0; i < no; i++)
        p[i].acc(mno);
    break;
}
} while (ch != 5);
}

```

```

1. Accept Person details
2. Display Person details
3. To search the mobile number of a given Person
4. To search the Person details of a given mobile number
5. Exit
Enter your choice :- 1
Enter how many Person Details you want to enter: 2

Enter Person no : 1

Enter Person name : Anupam

Enter Person mob no : 12345

Enter Person no : 2

Enter Person name : Moharana

Enter Person mob no : 654321
1. Accept Person details
2. Display Person details
3. To search the mobile number of a given Person
4. To search the Person details of a given mobile number
5. Exit
Enter your choice :- 2

Person details

Person no      : 1
Person name    : Anupam
Person mob no  : 12345

Person details

Person no      : 2
Person name    : Moharana
Person mob no  : 654321
1. Accept Person details
2. Display Person details
3. To search the mobile number of a given Person
4. To search the Person details of a given mobile number
Enter your choice :- 3

Enter Person name search for mob no : Anupam

Person name    : Anupam
Person mob no  : 12345

```

Enter your choice :- 3

Enter Person name search for mob no : Anupam

Person name : Anupam

Person mob no : 12345

1. Accept Person details
2. Display Person details
3. To search the mobile number of a given Person
4. To search the Person details of a given mobile number
5. Exit

Enter your choice :- 4

Enter mob no search for Person name : 654321

Person name : Moharana

Person mob no : 654321

1. Accept Person details
2. Display Person details
3. To search the mobile number of a given Person
4. To search the Person details of a given mobile number
5. Exit

Enter your choice :- 5

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