

C++ Programming Lab Manual

Program Index

Prog. No.	Program Description
Program 17	Program to Find Area of Rectangle Using Inline Function
Program 18	Program to Calculate Area of Rectangle Using a Friend Function
Program 19	Program to Demonstrate Static Data Member and Count Object
Program 20	Program to Demonstrate an Array Within a Class
Program 21	Program to Find Area of Rectangle Using Pass by Value
Program 22	Program to Find Area of Rectangle Using Arrow Operator and Dereference Operator

Program 17: Program to Find Area of Rectangle Using Inline Function

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

class rectangle
{
public:
    int length;
    int breadth;

    inline void area()
    {
        int area;
        area = length * breadth;
        cout << "Area of rectangle is " << area << endl;
    }
};

int main()
{
    rectangle r;
    r.length = 102;
    r.breadth = 203;
    r.area();
    return 0;
}
```

Program 18: Program to Calculate Area of Rectangle Using a Friend Function

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

class rectangle
{
private:
    int length;
protected:
    int breadth;
public:
    void setdimensions(int l, int b)
    {
        length = l;
        breadth = b;
    }
    friend void displayarea(rectangle r);
};
```

```

void displayarea(rectangle r)
{
    int area;
    area = r.length * r.breadth;
    cout << "Area of rectangle is " << area << endl;
}

int main()
{
    rectangle rect;
    rect.setdimensions(20, 70);
    displayarea(rect);
    return 0;
}

```

Program 19: Program to Demonstrate Static Data Member and Count Object

```

#include <iostream>
using namespace std;

class counter
{
    int n;
    static int count;
public:
    void getdata(int number)
    {
        n = number;
        count++;
    }
    void showdata()
    {
        cout << "count is " << count << endl;
    }
};

int counter::count = 0;

int main()
{
    counter C1, C2, C3;
    C1.showdata();
    C2.showdata();
    C3.showdata();

    C1.getdata(100);
    C1.showdata();
}

```

```
C2.getdata(200);
C2.showdata();

return 0;
}
```

Program 20: Program to Demonstrate an Array Within a Class

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

class student
{
private:
    int marks[5];
public:
    void getmarks();
    void showmarks();
};

void student::getmarks()
{
    cout << "Enter the marks of subjects:" << endl;
    for (int i = 0; i < 5; i++)
    {
        cout << "marks of subject " << i + 1 << ": ";
        cin >> marks[i];
    }
}

void student::showmarks()
{
    for (int i = 0; i < 5; i++)
    {
        cout << " marks of subject " << i + 1 << ": ";
        cout << marks[i] << endl;
    }
}

int main()
{
    student s;
    s.getmarks();
    s.showmarks();
    return 0;
}
```

Program 21: Program to Find Area of Rectangle Using Pass by Value

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

class rectangle
{
public:
    int length;
    int breadth;

    void getdata()
    {
        cout << "Enter the length of rectangle" << endl;
        cin >> length;
        cout << "Enter the breadth of rectangle" << endl;
        cin >> breadth;
    }

    void showdata()
    {
        cout << "length is " << length << endl;
        cout << "breadth is " << breadth << endl;
    }
};

void displayarea(rectangle r)
{
    int area;
    area = r.length * r.breadth;
    cout << "area is = " << area << endl;
}

int main()
{
    rectangle r1;
    r1.getdata();
    r1.showdata();
    displayarea(r1);
    return 0;
}
```

Program 22: Program to Find Area of Rectangle Using Arrow Operator and Dereference Operator

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

class rectangle
```

```
{
public:
    int length;
    int breadth;

    void setdimensions(int l, int b)
    {
        length = l;
        breadth = b;
    }

    void displayarea()
    {
        int area;
        area = length * breadth;
        cout << "area is " << area << endl;
    }
};

int main()
{
    rectangle r;
    rectangle *ptr;
    ptr = &r;

    ptr->setdimensions(107, 20);
    ptr->displayarea();

    (*ptr).setdimensions(15, 302);
    (*ptr).displayarea();

    return 0;
}
```