MA122 - Computer Programming and Applications

Indian Institute of Space Science and Technology

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Lecture 28

1 Operator overloading

Operator overloading: example 1


```
1  #include <iostream>
2  using namespace std;
3  class space
4  {
5      int x;
6      int y;
7      int z;
8  public:
9      void getdata (int a, int b, int c);
10     void display (void);
11     void operator-();
12
13 };
14 void space::getdata(int a, int b, int c)
15 {
16     x=a;
```

Operator overloading:example 1


```
    y=b;
    z=c;
}
void space::display(void)
{
    cout<<"x= "<<x<<" ";
    cout<<"y= "<<y<<" ";
    cout<<"z= "<<z<<endl;
}
void space::operator-()
{
    x=-x;
    y=-y;
    z=-z;
}
```

Operator overloading:example 1


```
1  int main()
2  {
3      space S;
4      S.getdata(10,-20,30);
5      cout<<" S : ";
6      S.display();
7      -S;
8      cout<<"-S: ";
9      S.display();
10     return 0;
11 }
```

Operator overloading: example 2


```
1  #include <iostream>
2  using namespace std;
3  class Box {
4  public:
5
6      double getVolume(void) {
7          return length * breadth * height;
8      }
9          void setLength( double len ) {
10         length = len;
11     }
12
13     void setBreadth( double bre ) {
14         breadth = bre;
15     }
16         void setHeight( double hei ) {
17         height = hei;
18     }
```

Operator overloading:example 2


```
1     // Overload + operator to add two Box objects.
2     Box operator+(const Box& b) {
3         Box box;
4         box.length = this->length + b.length;
5         box.breadth = this->breadth + b.breadth;
6         box.height = this->height + b.height;
7         return box;
8     }
9
10 private:
11     double length;     // Length of a box
12     double breadth;    // Breadth of a box
13     double height;     // Height of a box
14 };
```

Operator overloading:example 2


```
1  int main( ) {
2      Box Box1;                // Declare Box1 of type Box
3      Box Box2;                // Declare Box2 of type Box
4      Box Box3;                // Declare Box3 of type Box
5      double volume = 0.0;     // Store the volume of a
           box here
6
7      // box 1 specification
8      Box1.setLength(6.0);
9      Box1.setBreadth(7.0);
10     Box1.setHeight(5.0);
11
12     // box 2 specification
13     Box2.setLength(12.0);
14     Box2.setBreadth(13.0);
15     Box2.setHeight(10.0);
```

example 1


```
1     // volume of box 1
2     volume = Box1.getVolume();
3     cout << "Volume of Box1 : " << volume <<endl;
4
5     // volume of box 2
6     volume = Box2.getVolume();
7     cout << "Volume of Box2 : " << volume <<endl;
8
9     // Add two object as follows:
10    Box3 = Box1 + Box2;
11
12    // volume of box 3
13    volume = Box3.getVolume();
14    cout << "Volume of Box3 : " << volume <<endl;
15    return 0;
16 }
```