Overloading stream insertion and stream extraction operators

Lecture 15

Global functions

- If the left operand is not the object, (it may be object of different class or a fundamental type), then the operator is overloaded using a global function

  5+p
- To allow commutative functioning of operator

  p+5 as well as 5+p

What does stream insertion operator overloading mean?

```
class point { };
void main()
{
  point p, q;
  cin>>p;
  cout<<p;
}
```

Stream operators are overloaded a global functions

- As the left of the operator is not an object of point (user defined) class, these operators are overloaded using global functions

```
cin>>p;
```

Example

```
class point
{ int x;  int y;  int z;
  public:
  point(int c,int d,int f)  { x=c;y=d;z=f; }
  friend ostream  & operator <<(ostream &,point obj);
};
ostream & operator <<(ostream & x,point obj)
{ x<<"\n New point : "<<obj.x<<" "<<obj.y<<" "<<obj.z;
   return x; }
void main()
{ point p(10,20,30); cout<<p; }
```

Example

```
class point
{ int x;  int y;  int z;
  public:
  point(int c,int d,int f)  { x=c;y=d;z=f; }
  friend istream  & operator >>(istream &,point &);
};
istream & operator >>(istream & x,point & obj)
{ x>>"\n New point : “>>obj.x>>" “>>obj.y>>" “>>obj.z;
   return x; }
void main()
{ point p(10,20,30); cin>>p; }
```