

Generics	void swap(? n1,? n2){	LinkedList ...11
- Class	? temp = n1;	Stack
- Method	n1 = n2;	Queue
- Interface	n2 = temp;	
	}	

Till java 1.4

Object

From 1.5

Generics

# Type Parameters

1. Bounded Type Parameter

- It is used for class

2. Unbounded Type Parameter

- It is used for class references

- ? a wild card is used for unbounded type parameter

- types of unbounded type

1. Upper bound

2. Lower bound

Box<Number> b;

```
class Box {
    Number obj;
    obj=new Short();
    obj= new Double();
    obj = new Integer();
}
```

new Box<Integer>();

```
class Box {
    Integer obj;
    obj = new Short();
}
```

class Box {

Number obj = new Integer(); // upcasting

}

Integer i1 = new String();

Box<Number> b1 = new Box<Integer>();

class plasticBox extends Box(){

}

Generic Interfaces

- Comparable

- Comparator

//till java 1.4

```
interface Comparable {
    int compareTo(Object o);
}
```

// from java 1.5 onwards

```
interface Comparable<T> {
    int compareTo(T o);
}
```

class Employee implements Comparable{

int id;

Employee(int id){

this.id = id;

}

Employee e1 = new Employee(3);

Employee e2 = new Employee(1);

int value = e1.compareTo(e2);

@Override

int compareTo(Object obj) // this->e1, o->e2

{

Employee e2 = (Employee)obj;

if(this.id>e2.id)

return 7;

else if(this.id==e2.id)

return 0;

return -2;

}

}

Comparable c1 = new Employee()

```
class Employee implements Comparable<Employee>{
int id;
Employee(int id){
this.id = id;
}

@Override
int compareTo(Employee o) // this->e1, o->e2
{
    return this.id - o.id;
}
}
```

```
// from java 1.5 onwards
interface Comparable<T>{
int compareTo(T o);
}
```

```
Employee e1 = new Employee(3);
Employee e2 = new Employee(1);
int value = e1.compareTo(e2);
```

```
Comparable c1 = new Employee()
```

```
interface Comparator<T>{
    int compare(T o1, T o2);
}
```

```
class NameComparator implements Comparator<Employee>{
    @Override
    int compare(Employee o1, Employee o2){
        return Double.compare(o1.salary, o2.salary);
    }
}
```

```
NameComaparator comp = new NameComparator();
```



