

```
public class NumberChecker {  
  
    public <E> boolean isExist(E [] array, E x) {  
        for(int i = 0; i < array.length; i++)  
            if(array[i] == x)  
                return true;  
  
        return false;  
    }  
}
```

```
public class Checker extends NumberChecker {

    public boolean isExist(String [] array, String x) {
        for(int i = 0; i < array.length; i++)
            if(array[i].equals(x))
                return true;

        return false;
    }
}
```

```

public class TestChecker {

    public static void main(String [] args) {

        Integer [] i = new Integer[5];

        i[0] = 0;
        i[1] = 1;
        i[2] = 2;
        i[3] = 3;
        i[4] = 4;

        String [] s = new String[3];

        s[0] = "aaa";
        s[1] = "bbb";
        s[2] = "ccc";

        Checker checker = new Checker();

        boolean test1 = checker.isExist(i, 1);
        boolean test2 = checker.isExist(i, 7);
        boolean test3 = checker.isExist(s, "bbb");
        boolean test4 = checker.isExist(s, "rrr");

        System.out.println("Test 1 (Integer Array, 1)      : " + test1);
        System.out.println("Test 2 (Integer Array, 7)      : " + test2);
        System.out.println("Test 3 (String Array , \"bbb\"): " + test3);
        System.out.println("Test 4 (String Array , \"rrr\"): " + test4);
    }
}

```

```
public class Pair<F, S> {

    private F first;
    private S second;

    public Pair(F f, S s) {
        first = f;
        second = s;
    }

    public void setFirst(F f) {
        first = f;
    }

    public F getFirst() {
        return first;
    }

    public void setSecond(S s) {
        second = s;
    }

    public S getSecond() {
        return second;
    }

}
```

```
public class Triplet<F, S, T> extends Pair<F, S> {

    private T third;

    public Triplet(F f, S s, T t) {
        super(f, s);
        third = t;
    }

    public void setThird(T t) {
        third = t;
    }

    public T getThird() {
        return third;
    }

}
```

```
public class TestTriplet {

    public static void main(String [] args) {
        Triplet<Integer,Double,String> T1 = new Triplet<Integer, Double, String>(2,5.5,"hello!");

        System.out.println("T1 First : " + T1.getFirst());
        System.out.println("T1 Second: " + T1.getSecond());
        System.out.println("T1 Third : " + T1.getThird());

        Triplet<String,String,String> T2 = new Triplet<String,String,String>("A","B","C");

        System.out.println("T2 First : " + T2.getFirst());
        System.out.println("T2 Second: " + T2.getSecond());
        System.out.println("T2 Third : " + T2.getThird());

        Triplet<Double,String,Double> T3 = new Triplet<Double,String,Double>(2.3,"B",4.9);

        T3.setFirst(7.7);
        T3.setSecond("A");
        T3.setThird(10.2);

        System.out.println("T3 First : " + T3.getFirst());
        System.out.println("T3 Second: " + T3.getSecond());
        System.out.println("T3 Third : " + T3.getThird());
    }
}
```

```
public class MyList<E> {

    private E [] list;
    private int size;

    public MyList(int size) {
        list = (E []) new Object[size];
        size = 0;
    }

    public boolean add(E element) {
        if(size < list.length) {
            list[size] = element;
            size++;
            return true;
        }
        else {
            return false;
        }
    }

    public boolean remove(int index) {
        if(index >= 0 && index < size) {
            list[index] = list[size - 1];
            list[size - 1] = null;
            size--;
            return true;
        }
        else {
            return false;
        }
    }

    public E getElement(int index) {
        if(index >= 0 && index < size)
            return list[index];
        else
            return null;
    }

    public int length() {
        return size;
    }
}
```

```
public class Store {

    private MyList<Product> list;

    public Store(int size) {
        list = new MyList<Product>(size);
    }

    public boolean add(Product p) {
        return list.add(p);
    }

    public boolean remove(int index) {
        return list.remove(index);
    }

    public void printLaptops () {
        for(int i = 0; i < list.length(); i++) {
            Product p = list.getElement(i);

            if(p instanceof Laptop) {
                p.print();
                System.out.println("-----");
            }
        }
    }

    public void printTVs () {
        for(int i = 0; i < list.length(); i++) {
            Product p = list.getElement(i);

            if(p instanceof TV) {
                p.print();
                System.out.println("-----");
            }
        }
    }
}
```



```
public class Product {  
  
    private String name;  
    private int price;  
  
    public Product(String n, int p) {  
        name = n;  
        price = p;  
    }  
  
    public void print() {  
        System.out.println("Name : " + name);  
        System.out.println("Price: " + price);  
    }  
  
}
```

```
public class Laptop extends Product {  
  
    private int cpu;  
  
    public Laptop(String n, int p, int c) {  
        super(n, p);  
        cpu = c;  
    }  
  
    public void print() {  
        super.print();  
        System.out.println("CPU : " + cpu);  
    }  
  
}
```

```
public class TV extends Product {  
  
    private int size;  
  
    public TV(String n, int p, int s) {  
        super(n, p);  
        size = s;  
    }  
  
    public void print() {  
        super.print();  
        System.out.println("Size : " + size);  
    }  
  
}
```

```
public class TestStore {

    public static void main(String [] args) {
        Store s = new Store(10);

        Laptop laptop1 = new Laptop("Apple MacBook", 6000, 1300);
        Laptop laptop2 = new Laptop("Sony VAIO", 7000, 1200);
        Laptop laptop3 = new Laptop("Dell Inspiron", 4000, 1700);

        TV tv1 = new TV("Sony VEGA", 4000, 64);
        TV tv2 = new TV("Sharp", 3000, 64);
        TV tv3 = new TV("Samsung", 1000, 32);

        s.add(laptop1);
        s.add(tv1);
        s.add(laptop2);
        s.add(tv2);
        s.add(laptop3);
        s.add(tv3);

        System.out.println("=====");
        System.out.println("  Laptops");
        System.out.println("=====");

        s.printLaptops ();

        System.out.println("");

        System.out.println("=====");
        System.out.println("  TVs");
        System.out.println("=====");

        s.printTVs ();

    }
}
```