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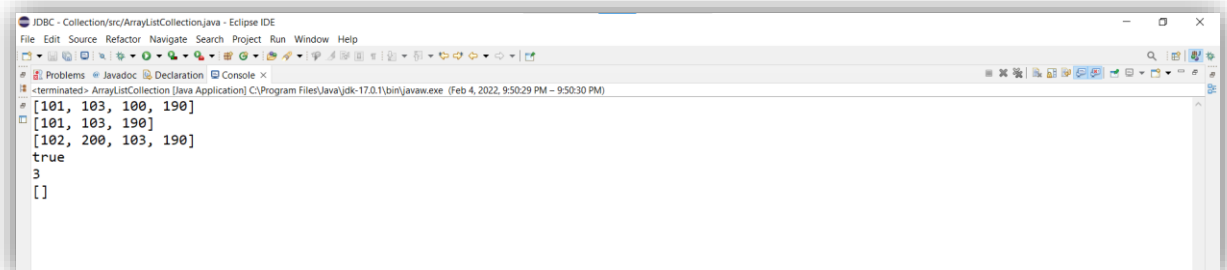
## Collection Framework

### 1) Array List

```
import java.util.ArrayList;
import java.util.List;

public class ArrayListCollection
{
    public static void main(String[] args) {
        ArrayList<Integer>list =new ArrayList<Integer>();
        list.add(101);
        list.add(103);
        list.add(100);
        list.add(190);
        System.out.println(list);
        list.remove(2);
        System.out.println(list);
        list.add(1, 200);
        list.set(0, 102);
        System.out.println(list);
        System.out.println(list.contains(103));
        System.out.println(list.indexOf(190));
        list.clear();
        System.out.println(list);
    }
}
```

### Output:-



### 2) Hash Map

```
import java.util.Collection;
import java.util.HashMap;
import java.util.List;
import java.util.Set;
```

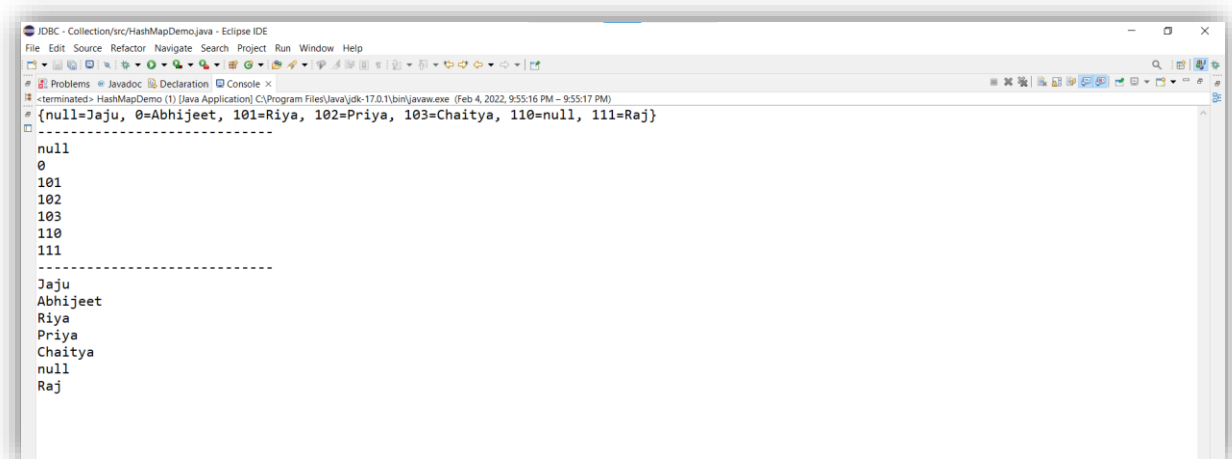
```

public class HashMapDemo {

    public static void main(String[] args) {
        HashMap<Integer, String>hm=new HashMap<Integer, String>();
        hm.put(101, "Raj");
        hm.put(102, "Priya");
        hm.put(103, "Chaitya");
        hm.put(110, null);
        hm.put(null, "Jaju");
        hm.put(0, "Abhijeet");
        hm.put(111, "Raj");
        hm.put(101, "Riya");
        System.out.println(hm);
        System.out.println("-----");
        Set<Integer> s=hm.keySet();
        for(Integer i:s) {
            System.out.println(i);
        }
        System.out.println("-----");
        Collection<String> li=hm.values();
        for(String s1:li) {
            System.out.println(s1);
        }
    }
}

```

Output:



The screenshot shows the Eclipse IDE interface with the console window open. The console output displays the contents of the HashMap, followed by the key set and the value set. The keys are printed as integers, and the values are printed as strings. The output is as follows:

```

{null=Jaju, 0=Abhijeet, 101=Riya, 102=Priya, 103=Chaitya, 110=null, 111=Raj}
-----
null
0
101
102
103
110
111
-----
Jaju
Abhijeet
Riya
Priya
Chaitya
null
Raj

```

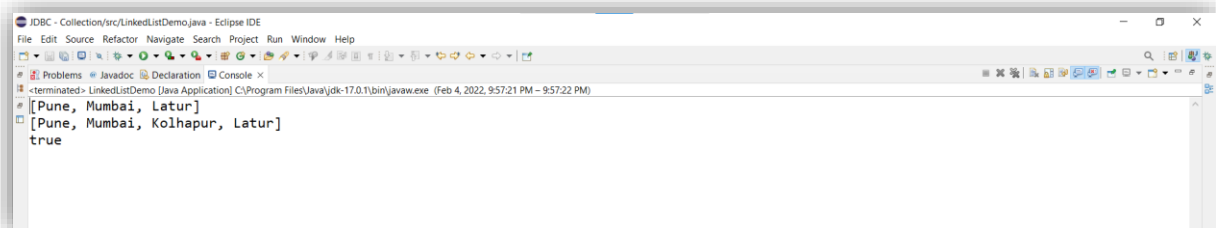
### 3) Linked List

```
import java.util.LinkedList;
import java.util.List;

public class LinkedListDemo {

    public static void main(String[] args) {
        LinkedList<String> list=new LinkedList<String>();
        list.add("Pune");
        list.add("Mumbai");
        list.add("Latur");
        System.out.println(list);
        list.add(2,"Kolhapur");
        System.out.println(list);
        System.out.println(list.contains("Latur"));
    }
}
```

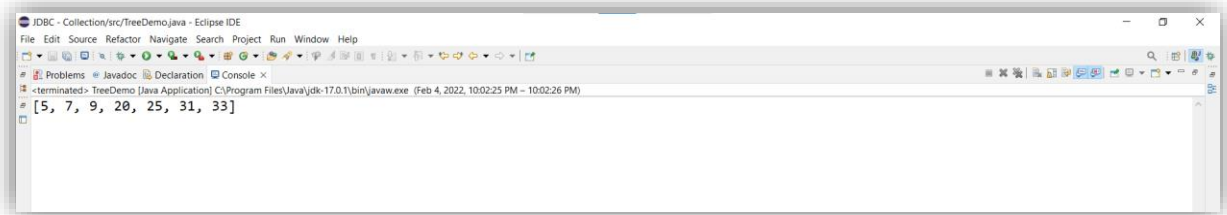
**Output:-**



### 4) Tree Set

```
import java.util.TreeSet;
public class TreeDemo{
    public static void main(String[] args) {
        TreeSet<Integer> tr=new TreeSet<Integer>();
        tr.add(7);
        tr.add(25);
        tr.add(33);
        tr.add(31);
        tr.add(5);
        tr.add(9);
        tr.add(5);
        tr.add(20);
        System.out.println(tr);
    }
}
```

## Output:



The screenshot shows the Eclipse IDE interface. The title bar reads "JDBC - Collection/src/TreeDemo.java - Eclipse IDE". The menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The toolbar contains various icons for file operations, running, and debugging. The "Console" tab is active, displaying the following output:

```
<terminated> TreeDemo [Java Application] C:\Program Files\Java\jdk-17.0.1\bin\javaw.exe (Feb 4, 2022, 10:02:25 PM - 10:02:26 PM)
[5, 7, 9, 20, 25, 31, 33]
```