Session - 1

1. **Create a class of ArrayList and add the objects by using add method and print the all the values which you added.**

Code:

```
package com.ia.collection;
import java.util.ArrayList;

    public class ArrList {
       public static void main(String[] args) {
          ArrayList obj = new ArrayList();
          obj.add(68);
          obj.add(false);
          obj.add(null);
          obj.add(45.0f);
          obj.add("sj");
        System.out.println("Values of ArrList"+obj);
         }
}
```

Output:

```
Values of ArrList[68, false, null, 45.0, sj]
```

2. **Create a of Linked List add the heterogenous objects print all the objects.**

Code:

```
package com.ia.collection;
import java.util.LinkedList;
   public class LinkedListEx {
       public static void main(String[] args) {
            LinkedList obj = new LinkedList();
            obj.add(345);
            obj.add(null);
            obj.add(false);
            obj.add("sj");
            obj.add(67.6f);
      System.out.println("Values: "+obj);
        }

    }
```

Output:

```
Values: [345, null, false, sj, 67.6]
```

3. **Create a LinkedList class and apply different methods for that class size(),contains(),isEmpty(),getFisrt(). print the results.**

Code:

```
package com.ia.collection;
import java.util.LinkedList;
public class LinkedListEx {
    public static void main(String[] args) {
        LinkedList obj = new LinkedList();
        obj.add(345);
        obj.add(null);
        obj.add(false);
        obj.add("sj");
        obj.add(67.6f);

      System.out.println("Values: "+obj);
      System.out.println("First Element : "+obj.getFirst());
      System.out.println("Last Element : "+obj.getLast());
      System.out.println("Contains method: "+obj.contains("sj"));
      System.out.println("Size: "+obj.size());
      System.out.println("Removes method: "+obj.remove());
      System.out.println("Remove at index 1: "+obj.remove(2));
      System.out.println("check empty or not: "+obj.isEmpty());
   }

 }
```

Output:

```
Last Element : 67.6
Contains method: true
Size: 5
Removes method: 345
Remove at index 2: sj
check empty or not: false
```

4. **class name is test and taking arraylist object add different objects and print the values by using for loop and foreach loop.**

Code:

```
package com.ia.collection;
import java.util.ArrayList;

      public class Test {
          public static void main(String[] args) {
            ArrayList obj = new ArrayList();
            obj.add(68);
            obj.add(false);
            obj.add(null);
            obj.add(45.0f);
            obj.add("sj");

       System.out.println("For Loop");
       for(int i=0;i<obj.size();i++) {
            System.out.print(obj.get(i)+" ");
        }

       System.out.println();
       System.out.println("For each loop:");
       for(Object o : obj){
        System.out.print(o+" ");
       }
     }
   }
```

Output:

```
For Loop
68 false null 45.0 sj
For each loop:
68 false null 45.0 sj
```

5. **Create a class with generics(perticular type integer) and add the values print even numbers.**

Code:

```
package com.ia.collection;
import java.util.ArrayList;

   public class GenericEx {
       public static void main(String[] args) {
         ArrayList<Integer> obj = new ArrayList<Integer>();
         obj.add(68);
```

```
            obj.add(53);
            obj.add(27);
            obj.add(78);
            obj.add(90);

        for(int i=0;i<obj.size();i++) {
            if(obj.get(i)%2==0) {
               System.out.print(obj.get(i)+" ");
             }
           }
         }
    }
```

Output:

```
68 78 90
```

6. **Create a ArrayList class by using Iterator print the values.**

Code:

```
package com.ia.collection;
import java.util.ArrayList;
import java.util.Iterator;

 public class ArrayListEx {
     public static void main(String[] args) {
          ArrayList obj = new ArrayList();
          obj.add(68);
          obj.add(false);
          obj.add(null);
          obj.add(45.0f);
          obj.add("sj");

          Iterator itr = obj.iterator();
          while(itr.hasNext()) {
             System.out.println(itr.next());
           }
         }

  }
```

Output:

```
68 false null 45.0 sj
```

7. **Create a class with generics and apply ListIterator cursor on that class and print the values.**

Code:

```
package com.ia.collection;
import java.util.ArrayList;
import java.util.Iterator;
import java.util.ListIterator;

   public class GenericEx {
      public static void main(String[] args) {
       ArrayList<Integer> obj = new ArrayList<Integer>();
          obj.add(68);
          obj.add(53);
          obj.add(27);
          obj.add(78);
          obj.add(90);

  ListIterator itr = obj.listIterator();
  System.out.println("Forward Direction");
  while(itr.hasNext()) {
       System.out.print(itr.next()+" ");
    }
  System.out.println();
  System.out.println("Reverse Direction");
  while(itr.hasPrevious()) {
       System.out.print(itr.previous()+" ");
     }
   }
}
```

Output:

```
Forward Direction
68 53 27 78 90
Reverse Direction
90 78 27 53 68
```

Session - 2

1. **Create a priorityQueue class add elements and print the values.**

   Code:

```
package com.ia.collection;

import java.util.Iterator;
import java.util.PriorityQueue;

public class PriorityQ {
public static void main(String[] args) {

      PriorityQueue<String> pq= new  PriorityQueue<String>();

      pq.add("robert");
      pq.add("john");
      pq.add("marry");
      pq.add("jim");
      pq.add("kery");


     System.out.println(pq);

      }
}
```

   Output:

```
[jim, john, marry, robert, kery]
```

2. **Create a of HasSet add the heterogenous objects print all the objects.**

   Code:

```
package com.ia.collection;
import java.util.HashSet;

 public class HashSetEx {

       public static void main(String[] args) {
```

```
        HashSet hs= new HashSet();

        hs.add("sweety");
        hs.add("jain");
        hs.add(78);
        hs.add(45.06);
        hs.add('h');
        hs.add("jain");
        hs.add(null);
        System.out.println(hs);

    }
}
```

Output:

```
[sweety, null, h, 45.06, jain, 78]
```

3. **Create a of Linked HashSet add the heterogenous objects print all the objects.**

Code:

```
package com.ia.collection;
import java.util.LinkedHashSet;

public class LinkedHashSetEx {

   public static void main(String[] args) {

        LinkedHashSet lhs= new LinkedHashSet();

          lhs.add("sweety");
          lhs.add("jain");
          lhs.add(78);
          lhs.add(45.06);
          lhs.add('h');
          lhs.add("jain");
          lhs.add(null);
          System.out.println(lhs);
    }
}
```

Output:

```
[sweety, jain, 78, 45.06, h, null]
```

4. **By using Generics create Tree Set and print the all the values.**

Code:

```
package com.ia.collection;
import java.util.TreeSet;

public class TreeSetEx {
    public static void main(String[] args) {
        TreeSet<String> obj = new TreeSet<String>();
        obj.add("ram");
        obj.add("ram");
        obj.add("shyam");
        obj.add("mohan");
        obj.add("sita");
        obj.add("geeta");


      System.out.println("Values of TreeSet: "+obj);
   }
}
```

Output:

```
Values of TreeSet: [geeta, mohan, ram, shyam, sita]
```