

## ***OOCJJ Assignment -5b***

Java programs to demonstrate the use of ArrayList, Vector, Stack, HashMap, LinkedList.

### 1) ArrayList:-

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

```
public class ArrayListExample {  
    public static void main(String[] args) {  
        ArrayList<String> fruits = new ArrayList<>();  
  
        fruits.add("apple");  
        fruits.add("banana");  
        fruits.add("cherry");  
  
        System.out.println("Fruits: " + fruits);  
        System.out.println("Size of fruits: " + fruits.size());  
        System.out.println("Element at index 1: " + fruits.get(1));  
  
        fruits.remove(1);  
  
        System.out.println("Fruits after removing element at index 1: " +  
fruits);  
    }  
}
```

### 2) Vector Example:-

```
import java.util.Vector;
```

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

```
Vector<String> animals = new Vector<>();
```

```
animals.add("cat");  
animals.add("dog");  
animals.add("elephant");
```

```
System.out.println("Animals: " + animals);  
System.out.println("Size of animals: " + animals.size());  
System.out.println("Element at index 1: " + animals.get(1));
```

```
animals.remove(1);
```

```
System.out.println("Animals after removing element at index 1: "  
+ animals);  
}  
}
```

### 3) Stack Example:-

```
import java.util.Stack;
```

```
public class StackExample {  
    public static void main(String[] args) {  
        Stack<String> fruits = new Stack<>();
```

```
        fruits.push("apple");  
        fruits.push("banana");  
        fruits.push("cherry");
```

```
        System.out.println("Fruits: " + fruits);  
        System.out.println("Size of fruits: " + fruits.size());  
        System.out.println("Element at the top of stack: " + fruits.peek());
```

```
fruits.pop();
```

```
    System.out.println("Fruits after removing element from top of  
stack: " + fruits);  
    }  
}
```

#### 4) HashMap Example:-

```
import java.util.HashMap;
```

```
public class HashMapExample {  
    public static void main(String[] args) {  
        HashMap<Integer, String> students = new HashMap<>();  
  
        students.put(1, "John");  
        students.put(2, "Jane");  
        students.put(3, "Bob");  
  
        System.out.println("Students: " + students);  
        System.out.println("Size of students: " + students.size());  
        System.out.println("Element with key 2: " + students.get(2));  
  
        students.remove(2);  
  
        System.out.println("Students after removing element with key 2: "  
+ students);  
    }  
}
```

#### 5) LinkedList Example:-

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

```
public class LinkedListExample {  
    public static void main(String[] args) {  
        LinkedList<String> cities = new LinkedList<>();  
  
        cities.add("New York");  
        cities.add("London");  
        cities.add("Paris");  
  
        System.out.println("Cities: " + cities);  
        System.out.println("Size of cities: " + cities.size());  
        System.out.println("Element at index 1: " + cities.get(1));  
  
        cities.remove(1);  
  
        System.out.println("Cities after removing element at index 1: " +  
cities);  
    }  
}
```