***COLLECTIONS***

**DYNAMIC ARRAY:**

**SOURCE CODE:**

package Collections;

import java.util.ArrayList;

public class Dynamicarray {

public static void main(String[] args) {

// Create an ArrayList of integers

ArrayList<Integer> dynamicArray = new ArrayList<>();

// Add elements to the ArrayList

dynamicArray.add(2);

dynamicArray.add(4);

dynamicArray.add(6);

// Print the elements in the ArrayList

System.out.println("Elements in the ArrayList:");

for (Integer element : dynamicArray) {

System.out.println(element);

}

// Remove an element from the ArrayList

dynamicArray.remove(1);

// Print the modified ArrayList

System.out.println("\nElements in the ArrayList after removal:");

for (Integer element : dynamicArray) {

System.out.println(element);

}

}

}

**OUTPUT:**

Elements in the ArrayList:

2

4

6

Elements in the ArrayList after removal:

2

6

**HASHSET:**

**SOURCE CODE:**

package Collections;

import java.util.HashSet;

import java.util.Iterator;

public class hashset {

public static void main(String[] args) {

// Create a HashSet of strings

HashSet<String> stringSet = new HashSet<>();

// Add elements to the HashSet

stringSet.add("Apple");

stringSet.add("Banana");

stringSet.add("Orange");

// Print the elements in the HashSet using an iterator

System.out.println("Elements in the HashSet:");

Iterator<String> iterator = stringSet.iterator();

while (iterator.hasNext()) {

System.out.println(iterator.next());

}

// Remove an element from the HashSet

stringSet.remove("Banana");

// Print the modified HashSet

System.out.println("\nElements in the HashSet after removal:");

for (String element : stringSet) {

System.out.println(element);

}

}

}

**OUTPUT:**

Elements in the HashSet:

Apple

Orange

Banana

Elements in the HashSet after removal:

Apple

Orange

**TREEMAP:**

**SOURCE CODE:**

package Collections;

import java.util.\*;

public class treemap {

public static void main(String[] args) {

// Create a TreeMap to store country-capital pairs

TreeMap<String, String> country = new TreeMap<>();

// Add country-capital pairs to the TreeMap

country.put("USA", "Washington");

country.put("UK", "London");

country.put("France", "Paris");

// Print the country-capital pairs

System.out.println("Country Capitals:");

for (Map.Entry<String, String> entry : country.entrySet()) {

System.out.println(entry.getKey() + ": " + entry.getValue());

}

// Look up the capital of a specific country

String count = "USA";

if (country.containsKey(count)) {

String capital = country.get(count);

System.out.println("\nThe capital of " + count + " is " + capital);

} else {

System.out.println("\nCapital not found for " + count);

}}}

**OUTPUT:**

Country Capitals:

France: Paris

UK: London

USA: Washington

The capital of USA is Washington

**VECTOR:**

**SOURCE CODE:**

package Collections;

import java.util.Vector;

import java.util.Iterator;

public class vector {

public static void main(String[] args) {

// Create a Vector of integers

Vector<Integer> integerVector = new Vector<>();

// Add elements to the Vector

integerVector.add(3);

integerVector.add(6);

integerVector.add(9);

// Print the elements in the Vector using an iterator

System.out.println("Elements in the Vector:");

Iterator<Integer> iterator = integerVector.iterator();

while (iterator.hasNext()) {

System.out.println(iterator.next());

}

// Remove an element from the Vector

integerVector.removeElement(9);

integerVector.removeElement(6);

// Print the modified Vector

System.out.println("\nElements in the Vector after removal:");

for (Integer element : integerVector) {

System.out.println(element);

}

}

}

**OUTPUT:**

Elements in the Vector:

3

6

9

Elements in the Vector after removal:

3