import java.util.HashMap;

import java.util.Map;

public class HashMapDemo {

public static void main(String[] args) {

// Create a HashMap instance

HashMap<String, Integer> map = new HashMap<>();

// Add key-value pairs to the HashMap

map.put("Alice", 30);

map.put("Bob", 25);

map.put("Charlie", 35);

// Access values from the HashMap

int ageOfAlice = map.get("Alice");

System.out.println("Alice's age: " + ageOfAlice);

// Check if a key exists

if (map.containsKey("Bob")) {

System.out.println("Bob is in the map.");

}

// Iterate through the keys

System.out.println("Iterating through the keys:");

for (String key : map.keySet()) {

System.out.println("Key: " + key);

}

// Iterate through the values

System.out.println("Iterating through the values:");

for (Integer value : map.values()) {

System.out.println("Value: " + value);

}

// Iterate through key-value pairs

System.out.println("Iterating through key-value pairs:");

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

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

}

// Remove a key-value pair

map.remove("Charlie");

System.out.println("After removing Charlie: " + map);

// Check if the map is empty

if (map.isEmpty()) {

System.out.println("The map is empty.");

} else {

System.out.println("The map is not empty.");

}

// Get the size of the map

System.out.println("Size of the map: " + map.size());

}

}