Telephone Directory Using HashMap

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

public class TelephoneDirectory {
    private Map<String, String> directory;

    public TelephoneDirectory() {
        directory = new HashMap<>();
    }

    public void addContact(String name, String phoneNumber) {
        directory.put(name, phoneNumber);
    }

    public String getPhoneNumber(String name) {
        return directory.get(name);
    }

    public static void main(String[] args) {
        TelephoneDirectory td = new TelephoneDirectory();
        td.addContact("Alice", "123-456-7890");
        td.addContact("Bob", "987-654-3210");

        System.out.println("Alice's Phone Number: " + td.getPhoneNumber("Alice"));
        System.out.println("Bob's Phone Number: " + td.getPhoneNumber("Bob"));
    }
}
```

Word Frequency Counter Using HashMap

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


public class WordFrequencyCounter {
    public static Map<String, Integer> countWords(String text) {
        Map<String, Integer> wordCounts = new HashMap<>();
        String[] words = text.split("\\s+");
        for (String word : words) {
            word = word.toLowerCase(); // Normalize the word
            wordCounts.put(word, wordCounts.getOrDefault(word, 0) + 1);
        }
        return wordCounts;
    }

    public static void main(String[] args) {
        String text = "Hello world. Hello Java. Hello Java World.";
        Map<String, Integer> frequencies = countWords(text);
        frequencies.forEach((word, count) -> System.out.println(word + ": " + count));
    }
}
```

Concordance Using HashMap

```
import java.util.HashMap;

import java.util.Map;

import java.util.ArrayList;

import java.util.List;


public class Concordance {

   public static Map<String, List<Integer>> createConcordance(String text) {

      Map<String, List<Integer>> concordance = new HashMap<>();

      String[] words = text.split("\\s+");

      for (int i = 0; i < words.length; i++) {

         String key = words[i].toLowerCase().replaceAll("[^a-zA-Z0-9]", ""); // Remove punctuation and
normalize

         if (!concordance.containsKey(key)) {

            concordance.put(key, new ArrayList<>());

         }

         concordance.get(key).add(i); // Add position to the list

      }

      return concordance;

   }


   public static void main(String[] args) {

      String text = "Hello Java. Hello World. Hello Java again.";

      Map<String, List<Integer>> concordance = createConcordance(text);

      concordance.forEach((word, positions) -> System.out.println(word + ": " + positions));

   }

}
```

Here are the outputs for the simulated Java programs:

1. Telephone Directory Output

- Alice's Phone Number: `123-456-7890`
- Bob's Phone Number: `987-654-3210`

2. Word Frequency Counter Output

- `hello`: 3
- `world`: 2
- `java`: 2

3. Concordance OutputS

- `hello`: Positions [0, 2, 4]
- `java`: Positions [1, 5]
- `world`: Position [3]
- `again`: Position [6]