**1.Write a program to count word frequencies in a given text.**

import java.util.HashMap;

import java.util.Map;

public class WordFrequencyCounter {

public static void main(String[] args) {

String text = "This is a sample text. It is used to demonstrate word frequency counting in Java.";

Map<String, Integer> wordFrequencyMap = countWordFrequencies(text);

System.out.println("Word Frequencies:");

for (Map.Entry<String, Integer> entry :

wordFrequencyMap.entrySet()) {

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

}

}

private static Map<String, Integer>

countWordFrequencies(String text) {

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

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

for (String word : words) {

word = word.replaceAll("[^a-zA-Z]", "").toLowerCase();

wordFrequencyMap.put(word, wordFrequencyMap.getOrDefault(word, 0) + 1);

}return wordFrequencyMap;

}

}

**2.Write a program that checks if a given word is a palindrome.**

import java.util.Scanner;

public class PalindromeChecker {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

System.out.print("Enter a word: ");

String word = scanner.nextLine();

if (isPalindrome(word)) {

System.out.println(word + " is a palindrome.");

}

else {

System.out.println(word + " is not a palindrome.");

}

scanner.close();

}

private static boolean isPalindrome(String str) {

str = str.toLowerCase();

str = str.replaceAll("[^a-z0-9]", "");

int left = 0;

int right = str.length() - 1;

while (left < right) {

if (str.charAt(left) != str.charAt(right)) {

return false;

}

left++;

right--;

}

return true;

}

}

**3.Create a list of numbers, then write a program that prints the square of each number in the list**.

import java.util.ArrayList;

public class SquareNumbers {

public static void main(String[] args) {

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

numbers.add(2);

numbers.add(5);

numbers.add(8);

for (int number : numbers) {

int square = number \* number;

System.out.println("Square of " + number + ": " + square);

}

}

}