WEEK-2

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

SOURCE CODE:

```java
import java.io.*;
class FrequencyCount {
    public static void main(String args[]) throws IOException {
        BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
        System.out.println("Enter the String: ");
        String s=br.readLine();
        System.out.println("Enter substring: ");
        String sub=br.readLine();
        int ind,count=0;
        for (int i=0; i+sub.length()<=s.length(); i++)  {
            ind=s.indexOf(sub,i);
            if(ind>=0) {
                count++;
                i=ind;
                ind=-1;
            }
        }
        System.out.println("Occurence of '"+sub+"' in String is "+count);
    }
}
```

OUTPUT:

Enter the string: programming language

Enter the substring: program

Occurrence of 'program' in String is 1

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

SOURCE CODE:

```java
import java.util.Scanner;
public class PalindromeChecker {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a string: ");
        String input = scanner.nextLine();
        if (isPalindrome(input)) {
            System.out.println(input + " is a palindrome!");
        } else {
            System.out.println(input + " is not a palindrome.");
        }
        scanner.close();
    }
    private static boolean isPalindrome(String str) {
        str = str.toLowerCase(); // Convert to lowercase for case-insensitive comparison
        int left = 0;
        int right = str.length() - 1;
        while (left < right) {
            if (str.charAt(left) != str.charAt(right)) {
                return false; // Not a palindrome
            }
            left++;
            right--;
        }
        return true; // Palindrome
    }
}
```

OUTPUT:

Enter a string: abba

abba is a palindrome!

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

SOURCE CODE:

```java
import java.util.ArrayList;
import java.util.List;
public class SquareNumbers {
    public static void main(String[] args) {
        List<Integer> numbers = new ArrayList<>();
        numbers.add(1);
        numbers.add(2);
        numbers.add(3);
        numbers.add(4);
        numbers.add(5);
        System.out.println("Original numbers: " + numbers);
        System.out.println("Squares:");
        for (Integer number : numbers) {
            int square = number * number;
            System.out.println(number + " square is: " + square);
        }
    }
}
```

OUTPUT:

Original numbers: [1, 2, 3, 4]

Squares:1 square is: 1

2 square is: 4

3 square is: 9

4 square is: 16