

ASSIGNMENT NO:-2

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Task 1 :- write the program to count word frequencies in a given text in java

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

public class WordFrequencyCounter {
    public static void main(String[] args) {
        // Create a Scanner object for reading input
        Scanner scanner = new Scanner(System.in);

        // Prompt the user to enter a text
        System.out.println("Enter a text:");
        String inputText = scanner.nextLine();

        // Split the input text into words
        String[] words = inputText.split("\\s+");

        // Create a HashMap to store word frequencies
        Map<String, Integer> wordFrequencies = new
HashMap<>();

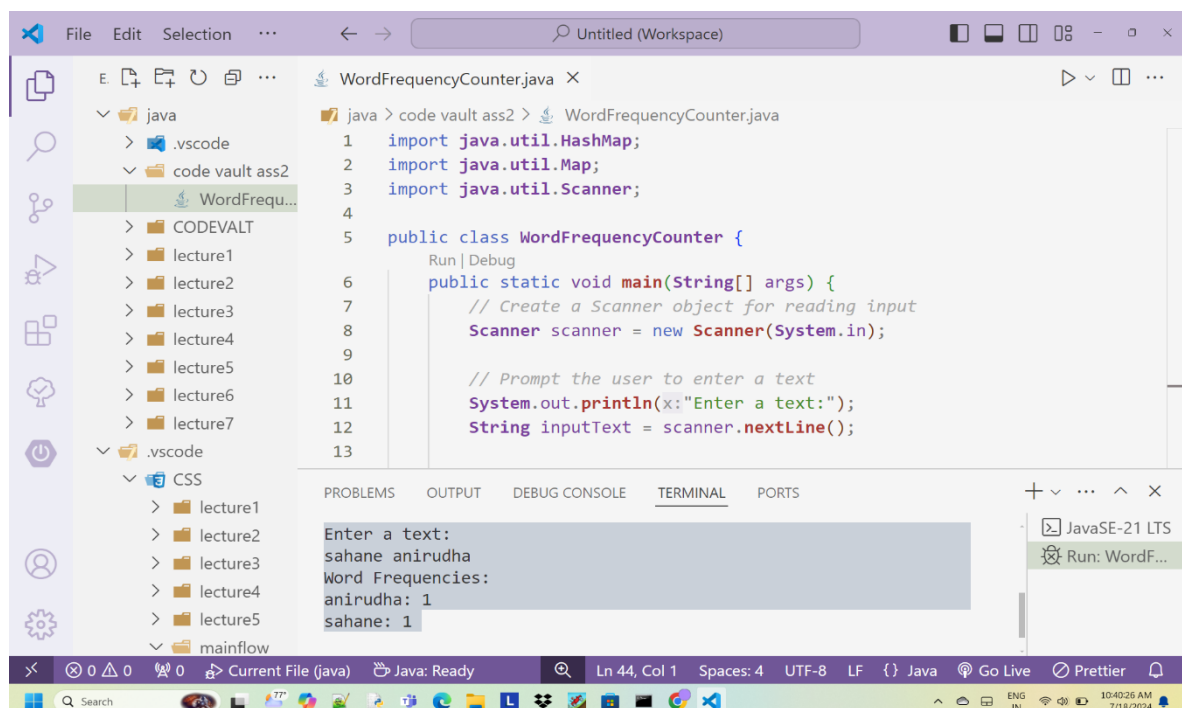
        // Iterate through each word in the array
        for (String word : words) {
            // Convert the word to lowercase to ensure case-
insensitive counting
            word = word.toLowerCase();
```

```
            // If the word is already in the map, increment its frequency
            if (wordFrequencies.containsKey(word)) {
                wordFrequencies.put(word,
wordFrequencies.get(word) + 1);
            } else {
                // Otherwise, add the word to the map with a
frequency of 1
                wordFrequencies.put(word, 1);
            }
        }

        // Print the word frequencies
        System.out.println("Word Frequencies:");
        for (Map.Entry<String, Integer> entry :
wordFrequencies.entrySet()) {
            System.out.println(entry.getKey() + ": " +
entry.getValue());
        }

        // Close the scanner
        scanner.close();
    }
}
```

Output:-



The screenshot shows a Visual Studio Code editor window with a file explorer on the left and a code editor in the center. The file explorer shows a project structure with folders like 'java', 'code vault ass2', 'CODEVALT', 'lecture1' through 'lecture7', and 'mainflow'. The code editor displays the 'WordFrequencyCounter.java' file with the following code:

```
1 import java.util.HashMap;
2 import java.util.Map;
3 import java.util.Scanner;
4
5 public class WordFrequencyCounter {
6     public static void main(String[] args) {
7         // Create a Scanner object for reading input
8         Scanner scanner = new Scanner(System.in);
9
10        // Prompt the user to enter a text
11        System.out.println("Enter a text:");
12        String inputText = scanner.nextLine();
13    }
14 }
```

The terminal output at the bottom shows the execution of the program:

```
Enter a text:
sahane anirudha
Word Frequencies:
anirudha: 1
sahane: 1
```

Task 2:- write a program that checks if a given word is palindrome or not

```
import java.util.Scanner;

public class PalindromeChecker {
    public static void main(String[] args) {
        // Create a Scanner object for reading input
        Scanner scanner = new Scanner(System.in);

        // Prompt the user to enter a word
        System.out.println("Enter a word:");
        String word = scanner.nextLine();

        // Check if the word is a palindrome
        boolean isPalindrome = isPalindrome(word);

        // Print the result
        if (isPalindrome) {
            System.out.println(word + " is a palindrome.");
        } else {
            System.out.println(word + " is not a palindrome.");
        }

        // Close the scanner
        scanner.close();
    }

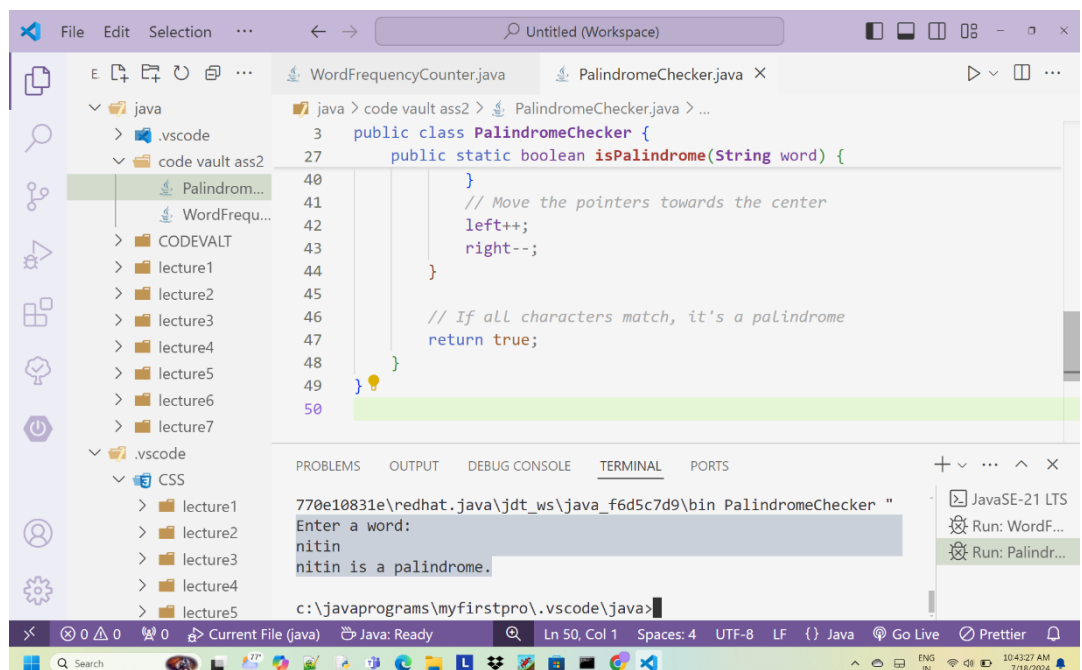
    // Method to check if a given word is a palindrome
    public static boolean isPalindrome(String word) {
        // Convert the word to lowercase to ensure case-insensitive comparison
        word = word.toLowerCase();

        // Initialize pointers for the start and end of the word
        int left = 0;
        int right = word.length() - 1;

        // Compare characters from the start and end moving towards the center
        while (left < right) {
            // If characters do not match, it's not a palindrome
            if (word.charAt(left) != word.charAt(right)) {
                return false;
            }
            // Move the pointers towards the center
            left++;
            right--;
        }

        // If all characters match, it's a palindrome
        return true;
    }
}
```

Output:-



The screenshot shows the Visual Studio Code (VS Code) editor interface. The main editor window displays the `PalindromeChecker.java` file, which contains the Java code for checking if a word is a palindrome. The code is as follows:

```
public class PalindromeChecker {
    public static boolean isPalindrome(String word) {
        // Move the pointers towards the center
        left++;
        right--;
    }

    // If all characters match, it's a palindrome
    return true;
}
```

The left sidebar shows the file explorer with a project structure including folders for `java`, `code vault ass2`, `CODEVAULT`, and `lecture1` through `lecture7`. The bottom panel shows the `TERMINAL` output, which displays the execution of the program:

```
770e10831e\redhat.java\jdt_ws\java_f6d5c7d9\bin PalindromeChecker "
Enter a word:
nitin
nitin is a palindrome.
```

The terminal output indicates that the word "nitin" is indeed a palindrome. The status bar at the bottom shows the current file is `Current File (java)`, the Java version is `Java: Ready`, and the editor is using `Ln 50, Col 1` with `Spaces: 4` and `UTF-8` encoding.

Task 3:-*create a list of number then write a program that prints the square of each number in the list*

<pre>import java.util.ArrayList; import java.util.List; import java.util.Scanner; public class SquareOfNumbers { public static void main(String[] args) { // Create a Scanner object for reading input Scanner scanner = new Scanner(System.in); // Create a list to store the numbers List<Integer> numbers = new ArrayList<>(); // Prompt the user to enter numbers System.out.println("Enter numbers (type 'done' to finish):"); // Read numbers from the user until 'done' is entered while (scanner.hasNext()) { if (scanner.hasNextInt()) { numbers.add(scanner.nextInt()); } else {</pre>	<pre> String input = scanner.next(); if (input.equalsIgnoreCase("done")) { break; } else { System.out.println("Invalid input. Please enter a number or 'done' to finish."); } } // Print the square of each number in the list System.out.println("Squares of the numbers:"); for (int number : numbers) { System.out.println(number + " squared is " + (number * number)); } // Close the scanner scanner.close(); } } }</pre>
--	--

Output:-

The screenshot shows a Visual Studio Code editor window with a file explorer on the left, a code editor in the center, and a terminal at the bottom. The file explorer shows a project structure with folders like 'java', 'code vault ass2', 'CODEVALT', 'lecture1' through 'lecture7', and 'CSS'. The code editor displays the 'SquareOfNumbers.java' file with the following code:

```
1 import java.util.ArrayList;
2 import java.util.List;
3 import java.util.Scanner;
4
5 public class SquareOfNumbers {
6     public static void main(String[] args) {
7         // Create a Scanner object for reading input
8         Scanner scanner = new Scanner(System.in);
9
10        // Create a List to store the numbers
11        List<Integer> numbers = new ArrayList<>();
12
13        // Prompt the user to enter numbers
```

The terminal at the bottom shows the program's execution output:

```
Enter numbers (type 'done' to finish):
55
done
Squares of the numbers:
55 squared is 3025
```

The status bar at the bottom indicates the current file is 'Current File (java)', the language is 'Java', and the editor is using 'UTF-8' encoding and 'LF' line endings.