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

```
import java.util.HashMap;
import java.util.Map;
public class Wordcounter {
    public static void main(String[] args) {
        String text = "java programming";
        Map<String, Integer> wordFrequencies = countWordFrequencies(text);
        System.out.println("Word frequencies:");
        for (Map.Entry<String, Integer> entry : wordFrequencies.entrySet()) {
            System.out.println(entry.getKey() + ": " + entry.getValue());
        }
    }
    public static Map<String, Integer> countWordFrequencies(String text) {
        Map<String, Integer> wordFrequencies = new HashMap<>();
        String[] words = text.split("\\s+");
        for (String word : words) {
            word = word.replaceAll("[^a-zA-Z]", "").toLowerCase();
            wordFrequencies.put(word, wordFrequencies.getOrDefault(word, 0) + 1);
        }
        return wordFrequencies;
    }
}
```

Output :

```
C:\Users\Admin\Desktop\B TECH>java Wordcounter
Word frequencies:
java: 1
programming: 1
C:\Users\Admin\Desktop\B TECH>
```

2. Palindrome Checker

```
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 input = scanner.nextLine();

        if (isPalindrome(input)) {

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

        } else {

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

        }

        scanner.close();

    }

    public static boolean isPalindrome(String word) {

        String cleanWord = word.replaceAll("[^a-zA-Z0-9]", "").toLowerCase();

        int length = cleanWord.length();

        for (int i = 0; i < length / 2; i++) {

            if (cleanWord.charAt(i) != cleanWord.charAt(length - 1 - i)) {

                return false;

            }

        }

        return true;

    }

}
```

```
}
```

Output:

```
C:\Users\Admin\Desktop\B TECH>javac PalindromeChecker.java  
C:\Users\Admin\Desktop\B TECH>java PalindromeChecker  
Enter a word: madam  
madam is a palindrome.  
C:\Users\Admin\Desktop\B TECH>_
```

3. List Manipulation

```
import java.util.ArrayList;
```

```
import java.util.List;
```

```
public class square {
```

```
    public static void main(String[] args) {
```

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

```
        numbers.add(2);
```

```
        numbers.add(5);
```

```
        numbers.add(8);
```

```
        numbers.add(10);
```

```
        // Print the squares of each number
```

```
        System.out.println("Original numbers: " + numbers);
```

```
        System.out.println("Squares:");
```

```
        for (int number : numbers) {
```

```
            int square = number * number;
```

```
            System.out.println(number + " squared is " + square);
```

```
        }
```

```
    }
```

```
}
```

Output:

```
C:\Users\Admin\Desktop\B TECH>java square  
Original numbers: [2, 5, 8, 10]  
Squares:  
2 squared is 4  
5 squared is 25  
8 squared is 64  
10 squared is 100  
C:\Users\Admin\Desktop\B TECH>
```

