**Java Lab Assignments-2(Date of Assignment: 04/05/25)**

**Problem-1:** Palindrome Detector

**Objective:**

Check if each word in a sentence is a palindrome.

**Instructions:**

1. Ask the user to input a sentence.
2. Extract all words and store them in an ArrayList<String>.
3. Check each word to see if it’s a palindrome.
4. Display a list of palindrome words.

**Sample Input and Output:**

Enter a sentence: Madam Arora teaches malayalam

Palindromes found: madam, arora, malayalam

**Problem-2:** Word Length Analyzer

**Objective:**

Analyze the length of each word in a paragraph.

**Instructions:**

1. Input a paragraph from the user.
2. Split it into words and store them in an ArrayList.
3. Create a new ArrayList<Integer> that stores the length of each word.
4. Print the word and its length.

**Sample Input and Output:**

Enter The Paragraph: This is a test. Test is very hard.

Words: This, is, a, test, very, hard

Length: 4, 2, 1, 4, 4, 4

**Problem-3:** Duplicate Word Remover

**Objective:**

Remove all duplicate words from a sentence.

**Instructions:**

1. Input a sentence.
2. Store the words in an ArrayList.
3. Use a loop or HashSet to remove duplicates.
4. Print the list of unique words.

**Sample Input and Output:**

Input: Java is great and Java is powerful

Output: Java is great and powerful

**Problem-4:** Reverse Words in a Sentence

**Objective:**

Reverse each word in a sentence individually.

**Instructions:**

1. Input a sentence.
2. Store words in an ArrayList.
3. Reverse each word (not the sentence).
4. Print the reversed words.

**Sample Input and Output:**

Input: Hello World Java

Output: olleH dlroW avaJ