

Basic Java Syntax - Example Program

```
// To run:
// 1. View -> Tool Windows -> Terminal
// 2. In Terminal window, type:
//    java -cp out/production/WordPalindrome PalindromeChecker

/*
 * authors: Skiadas, Wilson
 * date: 4/21/2019
 * */

import java.util.Scanner;

public class PalindromeChecker {
    private static final String WHITESPACE_PATTERN = "\\s+";
    private String[] words;

    public PalindromeChecker(String s) {
        words = clean(s).split(WHITESPACE_PATTERN);
    }

    private String clean(String s) {
        return s.toLowerCase().trim();
    }

    boolean isPalindrome() {
        int last = words.length - 1;

        for (int i = 0; i < last - i; i++) {
            String word1 = words[i];
            String word2 = words[last - i];
            if (!word1.equals(word2)) {
                return false;
            }
        }
        return true;
    }

    private String generateResultMessage() {
        return isPalindrome() ?
            "It_is_a_word_palindrome!" :
            "It_is_NOT_a_word_palindrome";
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println(
            "Type_a_phrase_to_see_if_it_is_a_word-level_palindrome." +
            "Press_Ctrl-D_to_end.");

        while (scanner.hasNextLine()) {
            PalindromeChecker checker = new PalindromeChecker(scanner.nextLine());
            System.out.println(checker.generateResultMessage());
        }

        System.out.println("Goodbye!");
    }
}
```

}

Questions:

1. What does it mean that the `WHITESPACE_PATTERN` field has been declared *static*?
2. What does it mean that `WHITESPACE_PATTERN` has been declared *final*?
3. How many constructors does the `PalindromeChecker` class have?
4. What does it mean that the `clean` method has been declared *private*?
5. What is the scope of the `isPalindrome` method?
6. Can the signature of the `main` method be changed?
7. Which class methods do not take any parameters?
8. Which class methods do not declare any local variables?
9. How many `PalindromeChecker` objects will be created when the program executes?
10. Translate the body of `generateResultMessage` into an if-then statement.
11. What does `clean(s).split(WHITESPACE_PATTERN)` in `PalindromeChecker` accomplish?
12. What method is used to print to standard output?
13. What is the scope of variable `i` in the `isPalindrome` method?
14. Translate the for loop from `isPalindrome` into English.