Rajalakshmi Engineering College

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 8_Q5

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1.   Problem Statement

In a file management system, users are required to provide a valid file name when creating new files. The system enforces specific rules for file names to maintain consistency and avoid potential issues. Your task is to implement a Java program named FileNameValidator that takes user input for a file name and validates it according to the specified rules.

Rules for Valid File Name:

The file name must consist of alphanumeric characters (letters and digits) only.The file name must have a minimum length of 3 characters.

Implement a custom exception, FileNameValidator, to handle cases where the entered filename does not meet the specified criteria.

Input Format

The input consists of a string S, representing the desired filename.

Output Format

The output is displayed in the following format:

If the entered file name meets the specified criteria, the program outputs

"Valid file name"

If the entered file name does not meet the criteria and triggers the InvalidFileNameException, the program outputs

"Error: Invalid file name. It must be alphanumeric and have a minimum length of 3 characters."

Refer to the sample output for formatting specifications.

Sample Test Case

Input: myfile123
Output: Valid file name

Answer

```java
import java.util.Scanner;

class InvalidFileNameException extends Exception {
    public InvalidFileNameException(String message) {
        super(message);
    }
}

class FileNameValidator {

    public static boolean isAlphanumeric(String s) {
        for (char c : s.toCharArray()) {
            if (!Character.isLetterOrDigit(c)) {
                return false;
            }
        }
        return true;
```

```java
    }
    public static void validateFileName(String fileName) throws
InvalidFileNameException {
        if (fileName == null || fileName.length() < 3) {
            throw new InvalidFileNameException("Invalid file name. It must be
alphanumeric and have a minimum length of 3 characters.");
        }

        if (!isAlphanumeric(fileName)) {
            throw new InvalidFileNameException("Invalid file name. It must be
alphanumeric and have a minimum length of 3 characters.");
        }
    }
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        String fileName = scanner.nextLine();

        try {
            validateFileName(fileName);
            System.out.println("Valid file name");
        } catch (InvalidFileNameException e) {
            System.out.println("Error: Invalid file name. It must be alphanumeric and
have a minimum length of 3 characters.");
        } catch (Exception e) {
            System.out.println("Error: Invalid file name. It must be alphanumeric and
have a minimum length of 3 characters.");
        } finally {
            scanner.close();
        }
    }
}
```

Status : Correct   *Marks : 10/10*