Rajalakshmi Engineering College

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 8_Q1

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Write a program to validate the email address and display suitable exceptions if there is any mistake.

Create 3 custom exception classes as below

DotExceptionAtTheRateExceptionDomainException

A typical email address should have a " . " character, and a "@" character, and also the domain name should be valid. Valid domain names for practice be 'in', 'com', 'net', or 'biz'.

Display Invalid Dot usage, Invalid @ usage, or Invalid Domain message based on email id.

Get the email address from the user, validate the email by checking the

above-mentioned criteria, and print the validity status of the input email address.

Input Format

The first line of input contains the email to be validated.

Output Format

The output prints a Valid email address or an Invalid email address along with the suitable exception

If email ends with . or contains not exactly one . after @, it throws:

DotException: Invalid Dot usage

Invalid email address

If @ appears not exactly once, it throws:

AtTheRateException: Invalid @ usage

Invalid email address

If the part after the last dot is not among accepted domains:

DomainException: Invalid Domain

Invalid email address

If all conditions satisfied then print:

Valid email address

Refer to the sample input and output for format specifications.

Sample Test Case

Input: sample@gmail.com

Output: Valid email address

Answer

```
// You are using Java
import java.util.Scanner;

class DotException extends Exception {
    public DotException(String msg) {
        super(msg);
    }
}

class AtTheRateException extends Exception {
    public AtTheRateException(String msg) {
        super(msg);
    }
}

class DomainException extends Exception {
    public DomainException(String msg) {
        super(msg);
    }
}

public class Main {

    public static void validateEmail(String email)
            throws DotException, AtTheRateException, DomainException {

        // Check for exactly one '@'
        int atCount = 0;
        for (int i = 0; i < email.length(); i++) {
            if (email.charAt(i) == '@') {
                atCount++;
            }
```

```
    }
    if (atCount != 1) {
        throw new AtTheRateException("Invalid @ usage");
    }

    // Should not start or end with '.' or '@'
    if (email.startsWith(".") || email.endsWith(".") ||
        email.startsWith("@") || email.endsWith("@")) {
        throw new DotException("Invalid Dot usage");
    }

    // Consecutive '.' or '@' not allowed
    if (email.contains("..") || email.contains("@@")) {
        throw new DotException("Invalid Dot usage");
    }

    // Split into two parts at '@'
    int atIndex = email.indexOf('@');
    String localPart = email.substring(0, atIndex);
    String domainPart = email.substring(atIndex + 1);

    // Must have at least one '.' after '@'
    if (domainPart.indexOf('.') == -1) {
        throw new DotException("Invalid Dot usage");
    }

    // Find last dot position
    int lastDotIndex = email.lastIndexOf('.');
    if (lastDotIndex == -1 || lastDotIndex == email.length() - 1) {
        throw new DotException("Invalid Dot usage");
    }

    // Extract domain extension (after last dot)
    String extension = email.substring(lastDotIndex + 1);

    // Check if extension is valid
    if (!(extension.equals("in") || extension.equals("com") ||
          extension.equals("net") || extension.equals("biz"))) {
        throw new DomainException("Invalid Domain");
    }
}
```

```
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        String email = sc.nextLine();

        try {
            validateEmail(email);
            System.out.println("Valid email address");
        } catch (DotException e) {
            System.out.println("DotException: " + e.getMessage());
            System.out.println("Invalid email address");
        } catch (AtTheRateException e) {
            System.out.println("AtTheRateException: " + e.getMessage());
            System.out.println("Invalid email address");
        } catch (DomainException e) {
            System.out.println("DomainException: " + e.getMessage());
            System.out.println("Invalid email address");
        }
    }
}
```

Status : Correct **Marks : 10/10**