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 message) {
        super(message);
    }
}

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

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

public class Main {

    public static void validateEmail(String email) throws DotException,
AtTheRateException, DomainException {
        int len = email.length();

        int atCount = 0;
        for (char c : email.toCharArray()) {
            if (c == '@') atCount++;
        }
        if (atCount != 1) {
```

```
            throw new AtTheRateException("Invalid @ usage");
        }

        if (email.charAt(0) == '.' || email.charAt(0) == '@' ||
            email.charAt(len - 1) == '.' || email.charAt(len - 1) == '@') {
            throw new DotException("Invalid Dot usage");
        }

        for (int i = 0; i < len - 1; i++) {
            if ((email.charAt(i) == '.' && email.charAt(i + 1) == '.') ||
                (email.charAt(i) == '@' && email.charAt(i + 1) == '@')) {
                if (email.charAt(i) == '.') {
                    throw new DotException("Invalid Dot usage");
                } else {
                    throw new AtTheRateException("Invalid @ usage");
                }
            }
        }

        int atIndex = email.indexOf('@');
        String domainPart = email.substring(atIndex + 1);

        if (!domainPart.contains(".")) {
            throw new DotException("Invalid Dot usage");
        }

        if (email.endsWith(".")) {
            throw new DotException("Invalid Dot usage");
        }

        int lastDotIndex = email.lastIndexOf('.');
        String domainExtension = email.substring(lastDotIndex + 1);

        if (!(domainExtension.equals("in") || domainExtension.equals("com") ||
              domainExtension.equals("net") || domainExtension.equals("biz"))) {
            throw new DomainException("Invalid Domain");
        }
    }

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

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

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