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 {
    private static final String[] VALID_DOMAINS = { "in", "com", "net", "biz" };
    public static void validateEmail(String email)
            throws DotException, AtTheRateException, DomainException {
        if (email == null || email.length() < 5 || email.length() > 50) {
            throw new IllegalArgumentException("Email length out of allowed range");
        }
        if (email.startsWith(".") || email.startsWith("@")
                || email.endsWith(".") || email.endsWith("@")) {
            throw new DotException("Invalid Dot usage");
        }
        int atCount = 0;
        for (char c : email.toCharArray()) {
            if (c == '@') atCount++;
        }
```

```
        if (atCount != 1) {
            throw new AtTheRateException("Invalid @ usage");
        }
        String[] parts = email.split("@");
        String local = parts[0];
        String domainPart = parts[1];
        int dotPos = domainPart.lastIndexOf('.');
        if (dotPos == -1) {
            throw new DotException("Invalid Dot usage");
        }
        String namePart = domainPart.substring(0, dotPos);
        String extPart = domainPart.substring(dotPos + 1);
        boolean domainOk = false;
        for (String d : VALID_DOMAINS) {
            if (d.equals(extPart)) {
                domainOk = true;
                break;
            }
        }
        if (!domainOk) {
            throw new DomainException("Invalid Domain");
        }
        int countDotsInDomain = 0;
        for (char c : domainPart.toCharArray()) {
            if (c == '.') countDotsInDomain++;
        }
        if (countDotsInDomain != 1) {
            throw new DotException("Invalid Dot usage");
        }
        if (local.isEmpty() || namePart.isEmpty()) {
            throw new IllegalArgumentException("Invalid email structure");
        }
        if (email.contains("..") || email.contains("@@") || email.contains(".@") ||
email.contains("@.")) {
            throw new DotException("Invalid Dot usage");
        }
    }
    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());
            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");
        } catch (IllegalArgumentException e) {
            System.out.println("Invalid email address");
        }
        sc.close();
    }
}
```

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