Rajalakshmi Engineering College

Name: Poovizhi Poovizhi
Email: 241801203@rajalakshmi.edu.in
Roll no: 241801203
Phone: 9944210722
Branch: REC
Department: AI & DS - Section 3
Batch: 2028
Degree: B.E - AI & DS

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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

```
import java.util.*;

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 {
        String[] validDomains = {"in", "com", "net", "biz"};

        if (email.chars().filter(ch -> ch == '@').count() != 1)
            throw new AtTheRateException("Invalid @ usage");

        if (email.startsWith(".") || email.endsWith(".") || email.startsWith("@") ||
email.endsWith("@"))
            throw new DotException("Invalid Dot usage");
```

```
        if (email.contains("..") || email.contains("@@"))
            throw new DotException("Invalid Dot usage");

        String[] parts = email.split("@");
        if (parts.length != 2)
            throw new AtTheRateException("Invalid @ usage");

        String domainPart = parts[1];
        if (!domainPart.contains("."))
            throw new DotException("Invalid Dot usage");

        String[] domainSplit = domainPart.split("\\.");
        String extension = domainSplit[domainSplit.length - 1];

        boolean valid = false;
        for (String d : validDomains) {
            if (extension.equals(d)) {
                valid = true;
                break;
            }
        }

        if (!valid)
            throw new DomainException("Invalid Domain");

        if (email.endsWith("."))
            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(e.getClass().getSimpleName() + ": " + e.getMessage());
            System.out.println("Invalid email address");
        } catch (AtTheRateException e) {
            System.out.println(e.getClass().getSimpleName() + ": " + e.getMessage());
            System.out.println("Invalid email address");
```

```
        } catch (DomainException e) {
            System.out.println(e.getClass().getSimpleName() + ": " + e.getMessage());
            System.out.println("Invalid email address");
        }
    }
}
```

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