

# 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 {
    DotException(String msg) { super(msg); }
}

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

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

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

        // Check '@' appears exactly once
        int atCount = 0;
        for (int i = 0; i < email.length(); i++) {
            if (email.charAt(i) == '@') atCount++;
        }
        if (atCount != 1) {
            throw new AtTheRateException("Invalid @ usage");
        }

        int atPos = email.indexOf('@');

        // Dot usage checks:
        // 1) email must not end with '
```

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

// 2) Exactly one '.' after '@'
String afterAt = email.substring(atPos + 1);
int dotAfterAt = 0;
for (int i = 0; i < afterAt.length(); i++) {
    if (afterAt.charAt(i) == '.') dotAfterAt++;
}
if (dotAfterAt != 1) {
    throw new DotException("Invalid Dot usage");
}

// Domain validation: part after last '.' must be in {in, com, net, biz}
int lastDot = email.lastIndexOf('.');
String ext = email.substring(lastDot + 1);
if (!(ext.equals("in") || ext.equals("com") || ext.equals("net") || ext.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());
        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**