

# Rajalakshmi Engineering College

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Batch: 2028

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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 message) {  
        super(message);  
    }  
}  
  
class AtTheRateException extends Exception {  
    public AtTheRateException(String message) {  
        super(message);  
    }  
}  
  
class DomainException extends Exception {  
    public DomainException(String message) {  
        super(message);  
    }  
}  
  
class EmailValidator {  
    public static void validateEmail(String email) throws DotException,  
AtTheRateException, DomainException {  
        if (email.startsWith(".") || email.startsWith("@") || email.endsWith(".") ||  
email.endsWith("@")) {  
            throw new DotException("DotException: Invalid Dot usage");  
        }  
  
        int atCount = 0;  
        for (char ch : email.toCharArray()) {  
            if (ch == '@') atCount++;  
        }  
    }  
}
```

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

for (int i = 0; i < email.length() - 1; i++) {
    char c1 = email.charAt(i);
    char c2 = email.charAt(i + 1);
    if ((c1 == '.' && c2 == '.') || (c1 == '@' && c2 == '@') || (c1 == '.' && c2 == '@') ||
(c1 == '@' && c2 == '.')) {
        if (c1 == '.' || c2 == '.') {
            throw new DotException("DotException: Invalid Dot usage");
        } else {
            throw new AtTheRateException("AtTheRateException: Invalid @
usage");
        }
    }
}

int atIndex = email.indexOf('@');
String afterAt = email.substring(atIndex + 1);
int dotAfterAt = afterAt.indexOf('.');
if (dotAfterAt == -1) {
    throw new DotException("DotException: Invalid Dot usage");
}

int dotCountAfterAt = 0;
for (char ch : afterAt.toCharArray()) {
    if (ch == '.') dotCountAfterAt++;
}
if (dotCountAfterAt != 1) {
    throw new DotException("DotException: Invalid Dot usage");
}

int lastDotIndex = email.lastIndexOf('.');
String domain = email.substring(lastDotIndex + 1);
if (!(domain.equals("in") || domain.equals("com") || domain.equals("net") || domain.equals("biz"))) {
    throw new DomainException("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(e.getMessage() + " Invalid email address");
} catch (AtTheRateException e) {
    System.out.println(e.getMessage() + " Invalid email address");
} catch (DomainException e) {
    System.out.println(e.getMessage() + " Invalid email address");
}
}
```

**Status :** Correct

**Marks :** 10/10