

# 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.*;

// Custom exception for invalid dot usage
class DotException extends Exception {
    public DotException(String message) {
        super(message);
    }
}

// Custom exception for invalid @ usage
class AtTheRateException extends Exception {
    public AtTheRateException(String message) {
        super(message);
    }
}

// Custom exception for invalid domain usage
class DomainException extends Exception {
    public DomainException(String message) {
        super(message);
    }
}

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

        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");
    }
}

// Validation method
public static void validateEmail(String email)
    throws DotException, AtTheRateException, DomainException {

    // Check for invalid @ usage
    int atCount = email.length() - email.replace("@", "").length();
    if (atCount != 1 || email.startsWith "@" || email.endsWith "@" || email.contains "@@") {
        throw new AtTheRateException("Invalid @ usage");
    }

    // Check for invalid dot usage
    if (email.endsWith "." || email.startsWith "." || email.contains ..)) {
        throw new DotException("Invalid Dot usage");
    }

    // Ensure at least one ' ' after '@'
    int atIndex = email.indexOf '@';
    String afterAt = email.substring atIndex + 1);
    if (!afterAt.contains ".)) {
        throw new DotException("Invalid Dot usage");
    }

    // Extract domain after the last ' '
    String domain = email.substring(email.lastIndexOf '.' + 1);

    // Check domain validity
    List<String> validDomains = Arrays.asList("com", "in", "net", "biz");
    if (!validDomains.contains(domain)) {
```

```
        }  
    }  
    }  
    throw new DomainException("Invalid Domain");  
}
```

**Status : Correct**

**Marks : 10/10**