# 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***

```
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 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");
    }
}

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

    int atCount = email.length() - email.replace("@", "").length();
    if (atCount != 1) {
        throw new AtTheRateException("Invalid @ usage");
    }

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

    int atIndex = email.indexOf("@");
    String afterAt = email.substring(atIndex + 1);

    int dotCountAfterAt = afterAt.length() - afterAt.replace(".", "").length();
    if (dotCountAfterAt != 1) {
        throw new DotException("Invalid Dot usage");
    }

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

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

    int lastDot = email.lastIndexOf(".");
    String domain = email.substring(lastDot + 1);
```

```
        List<String> validDomains = Arrays.asList("in", "com", "net", "biz");

        if (!validDomains.contains(domain)) {
            throw new DomainException("Invalid Domain");
        }
    }
}
```

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