

Rajalakshmi Engineering College

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Batch: 2028

Degree: B.E - CSE

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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.chars().filter(ch -> ch == '@').count() != 1 ||  
            email.startsWith "@" || email.endsWith "@" || email.contains "@@") {  
            throw new AtTheRateException("Invalid @ usage");  
        }  
  
        if (email.startsWith ".." || email.endsWith ".." || email.contains "..") {  
            throw new DotException("Invalid Dot usage");  
        }  
    }  
}
```

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

String localPart = parts[0];
String domainPart = parts[1];

if (!domainPart.contains(".")) {
    throw new DotException("Invalid Dot usage");
}

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

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

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

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

System.out.println("Valid email address");
}

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

        try {
            EmailValidator.validateEmail(email);
        } 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