

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 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 void validate(String email) throws DotException, AtTheRateException,
DomainException {
        int atCount = email.length() - email.replace("@", "").length();
        if (atCount != 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");
        }
        int atIndex = email.indexOf '@';
        if (atIndex == -1 || atIndex == email.length() - 1) {
            throw new AtTheRateException("Invalid @ usage");
        }
    }
}
```

```
String domainPart = email.substring(atIndex + 1);
int lastDotIndex = domainPart.lastIndexOf('.');
if (lastDotIndex == -1 || lastDotIndex == domainPart.length() - 1) {
    throw new DotException("Invalid Dot usage");
}

String domainExtension = domainPart.substring(lastDotIndex + 1);
List<String> validDomains = Arrays.asList("in", "com", "net", "biz");
if (!validDomains.contains(domainExtension)) {
    throw new DomainException("Invalid Domain");
}
}

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