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 validateEmail(String email) throws DotException,
AtTheRateException, DomainException {
        if (email.chars().filter(ch -> ch == '@').count() != 1 ||
            email.startsWith("@") || email.endsWith("@") ||
            email.contains("..") || 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 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");
        }
    }

    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");
        }
        sc.close();
    }
}
```

Status : Correct *Marks : 10/10*