

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.Scanner;

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);
    }
}

public class Main {

    public static void validateEmail(String email) throws DotException,
AtTheRateException, DomainException {
        if (email.charAt(0) == '.' || email.charAt(0) == '@' ||
email.charAt(email.length() - 1) == '.' || email.charAt(email.length() - 1) == '@') {
            throw new DotException("Invalid Dot usage");
        }

        int atCount = 0;
        int dotCount = 0;
        int atIndex = -1;
```

```
for (int i = 0; i < email.length(); i++) {
    if (email.charAt(i) == '@') {
        atCount++;
        atIndex = i;
    } else if (email.charAt(i) == '.') {
        dotCount++;
    }
}

if (atCount != 1) {
    throw new AtTheRateException("Invalid @ usage");
}

if (dotCount == 0 || email.indexOf('.', atIndex) == -1) {
    throw new DotException("Invalid Dot usage");
}

String domain = email.substring(atIndex + 1);
String[] domainParts = domain.split("\\.");
String domainExtension = domainParts[domainParts.length - 1];

String[] validDomains = {"in", "com", "net", "biz"};
boolean validDomain = false;

for (String valid : validDomains) {
    if (domainExtension.equals(valid)) {
        validDomain = true;
        break;
    }
}

if (!validDomain) {
    throw new DomainException("Invalid Domain");
}

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

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

```
try {
    validateEmail(email);
} catch (DotException | AtTheRateException | DomainException e) {
    System.out.println(e.getClass().getSimpleName() + ": " + e.getMessage());
    System.out.println("Invalid email address");
}
}
```

Status : Correct

Marks : 10/10