

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

DotException
AtTheRateException
DomainException

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

        int atCount = 0;
        for (char ch : email.toCharArray()) {
            if (ch == '@') atCount++;
        }
    }
}
```

```

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

    for (int i = 0; i < email.length() - 1; i++) {
        char c1 = email.charAt(i);
        char c2 = email.charAt(i + 1);
        if ((c1 == '.' && c2 == '.') || (c1 == '@' && c2 == '@') || (c1 == '.' && c2 == '@') ||
(c1 == '@' && c2 == '.')) {
            if (c1 == '.' || c2 == '.') {
                throw new DotException("DotException: Invalid Dot usage");
            } else {
                throw new AtTheRateException("AtTheRateException: Invalid @
usage");
            }
        }
    }

    int atIndex = email.indexOf('@');
    String afterAt = email.substring(atIndex + 1);
    int dotAfterAt = afterAt.indexOf('.');
    if (dotAfterAt == -1) {
        throw new DotException("DotException: Invalid Dot usage");
    }

    int dotCountAfterAt = 0;
    for (char ch : afterAt.toCharArray()) {
        if (ch == '.') dotCountAfterAt++;
    }
    if (dotCountAfterAt != 1) {
        throw new DotException("DotException: Invalid Dot usage");
    }

    int lastDotIndex = email.lastIndexOf('.');
    String domain = email.substring(lastDotIndex + 1);
    if (!(domain.equals("in") || domain.equals("com") || domain.equals("net") ||
domain.equals("biz"))) {
        throw new DomainException("DomainException: Invalid Domain");
    }
}

public static void main(String[] args) {

```

```
Scanner sc = new Scanner(System.in);
String email = sc.nextLine();

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

Status : Correct

Marks : 10/10