

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

// You are using Java

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);  
    }  
}
```

```
public class Main {  
    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");
    }
}

```

```

public static void validateEmail(String email) throws DotException,
AtTheRateException, DomainException {
    // Check for '@' usage
    int atCount = email.length() - email.replace("@", "").length();
    if (atCount != 1) {
        throw new AtTheRateException("Invalid @ usage");
    }

    if (email.startsWith("@") || email.endsWith("@") || email.contains("@@")) {
        throw new AtTheRateException("Invalid @ usage");
    }

    // Check for dot usage
    if (email.startsWith(".") || email.endsWith(".") || email.contains("..")) {
        throw new DotException("Invalid Dot usage");
    }

    int atIndex = email.indexOf('@');
    int lastDotIndex = email.lastIndexOf('.');

    // There must be at least one '.' after '@'
    if (lastDotIndex < atIndex + 1 || lastDotIndex == email.length() - 1) {
        throw new DotException("Invalid Dot usage");
    }

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

```

}

Status : Correct

Marks : 10/10