

Rajalakshmi Engineering College

Name: Krishna Kumar

Email: 240701622@rajalakshmi.edu.in

Roll no:

Phone: null

Branch: REC

Department: CSE - Section 10

Batch: 2028

Degree: B.E - CSE

Scan to verify results



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.Scanner;

// Custom Exceptions
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 {

        // Check: Exactly one '@'
        int atCount = email.length() - email.replace("@", "").length();
        if (atCount != 1) {
            throw new AtTheRateException("Invalid @ usage");
        }
    }
}
```

```
// Cannot start or end with '.' or '@'  
if (email.startsWith(".")) || email.startsWith("@") ||  
    email.endsWith(".")) || email.endsWith("@")) {  
    throw new DotException("Invalid Dot usage");  
}  
  
// Split local and domain parts  
int atIndex = email.indexOf("@");  
String domainPart = email.substring(atIndex + 1);  
  
// Must have at least one dot AFTER '@'  
if (!domainPart.contains(".")) {  
    throw new DotException("Invalid Dot usage");  
}  
  
// Last dot usage determines extension  
int lastDotIndex = email.lastIndexOf(".");  
String extension = email.substring(lastDotIndex + 1);  
  
// Valid domain list  
String[] validDomains = {"in", "com", "net", "biz"};  
  
boolean valid = false;  
for (String d : validDomains) {  
    if (extension.equals(d)) {  
        valid = true;  
        break;  
    }  
}  
if (!valid) {  
    throw new 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("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