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 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 {

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

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

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

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

String[] parts = email.split("@");
String localPart = parts[0];
String domainPart = parts[1];

if (!domainPart.contains(".")) {
    throw new DotException("Invalid Dot usage");
}

int dotCountInDomain = 0;
for (char c : domainPart.toCharArray()) {
    if (c == '.') {
        dotCountInDomain++;
    }
}

if (dotCountInDomain != 1) {
    throw new DotException("Invalid Dot usage");
}

String[] domainParts = domainPart.split("\\.");
String domainExtension = domainParts[domainParts.length - 1];

if (!domainExtension.equals("in") && !domainExtension.equals("com") &&
    !domainExtension.equals("net") && !domainExtension.equals("biz")) {
    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***