

Rajalakshmi Engineering College

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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

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;

// 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);
    }
}

// Validator class
class EmailValidator {
    public void validate(String email) throws DotException, AtTheRateException,
DomainException {
        int countAt = 0;
        for (char c : email.toCharArray()) {
            if (c == '@') countAt++;
        }
        if (countAt != 1 || email.startsWith("@") || email.endsWith("@") ||
email.contains(" @@")) {
            throw new AtTheRateException("AtTheRateException: Invalid @ usage");
        }
    }
}
```

```

}

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

int atPos = email.indexOf('@');
String afterAt = email.substring(atPos + 1);
int dotCountAfter = 0;
for (char c: afterAt.toCharArray()) {
    if (c == '.') dotCountAfter++;
}
if (dotCountAfter != 1) {
    throw new DotException("DotException: Invalid Dot usage");
}

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

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

        EmailValidator validator = new EmailValidator();

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

```
        } catch (DomainException e) {
            System.out.println(e.getMessage());
            System.out.println("Invalid email address");
        }

        scanner.close();
    }
}
```

Status : Correct

Marks : 10/10