Create a class Student with attributes roll no, name, age and course. Initialize values through parameterized constructor. If age of student is not in between 15 and 21 then generate user-defined exception "AgeNotWithinRangeException". If name contains numbers or special symbols raise exception "NameNotValidException". Define the two exception classes.

CODE:

import java.util.Scanner;

// Custom exception for age not within range

class AgeNotWithinRangeException extends Exception {

public AgeNotWithinRangeException(String message) {

super(message);

}

}

// Custom exception for invalid name

class NameNotValidException extends Exception {

public NameNotValidException(String message) {

super(message);

}

}

class Student {

private int rollNo;

private String name;

private int age;

private String course;

// Parameterized constructor to initialize attributes

public Student(int rollNo, String name, int age, String course) throws AgeNotWithinRangeException, NameNotValidException {

if (age < 15 || age > 21) {

throw new AgeNotWithinRangeException("Age should be between 15 and 21.");

}

if (!isValidName(name)) {

throw new NameNotValidException("Name should not contain numbers or special symbols.");

}

this.rollNo = rollNo;

this.name = name;

this.age = age;

this.course = course;

}

// Method to check if name is valid

private boolean isValidName(String name) {

return name.matches("[a-zA-Z]+");

}

// Method to display student details

public void displayDetails() {

System.out.println("Roll No: " + rollNo);

System.out.println("Name: " + name);

System.out.println("Age: " + age);

System.out.println("Course: " + course);

}

}

public class NameValidation {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

// Input student details

System.out.print("Enter Roll No: ");

int rollNo = scanner.nextInt();

scanner.nextLine(); // Consume newline

System.out.print("Enter Name: ");

String name = scanner.nextLine();

System.out.print("Enter Age: ");

int age = scanner.nextInt();

scanner.nextLine(); // Consume newline

System.out.print("Enter Course: ");

String course = scanner.nextLine();

// Creating student object and handling exceptions

try {

Student student = new Student(rollNo, name, age, course);

System.out.println("\nStudent Details:");

student.displayDetails();

} catch (AgeNotWithinRangeException | NameNotValidException e) {

System.out.println("Error: " + e.getMessage());

}

scanner.close(); // Closing the scanner object

}

}

OUTPUT:

C:\javap>javac NameValidation.java

C:\javap>java NameValidation

Enter Roll No: 15

Enter Name: Namit

Enter Age: 20

Enter Course: Java

Student Details:

Roll No: 15

Name: Namit

Age: 20

Course: Java

