Programming Exercises - PRO1 - Session 23

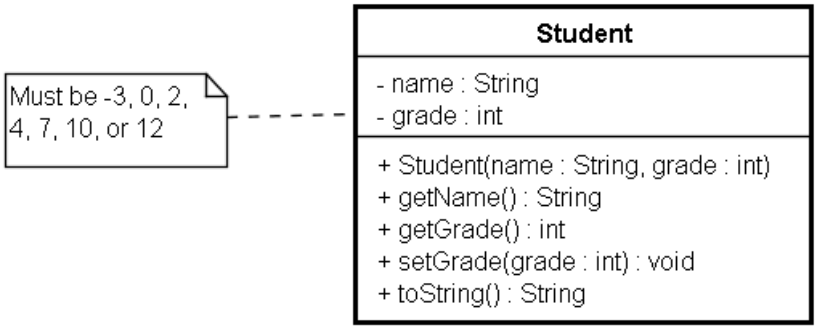
Exercise 23.01

The following code throws an exception if the user enters 0 for y. Change the code so that the exception is caught, and a message is displayed. Make sure the program still prints the three other results in case of an exception. So, first run the program without any error handling, to find out exactly which exception is thrown when y is 0, and in which statement the exception occurs. This will tell you which statement to place in the try section, and which exception to catch in the catch section.

```
import java.util.Scanner;
public class MathTest
{
   public static void main(String[] args)
   {
      Scanner scanner = new Scanner(System.in);

      System.out.println("Enter x: ");
      int x = scanner.nextInt();

      System.out.println("Enter y: ");
      int y = scanner.nextInt();

      System.out.println("x + y = " + (x + y));
      System.out.println("x - y = " + (x - y));
      System.out.println("x / y = " + (x / y));
      System.out.println("x * y = " + (x * y));
   }
}
```

Exercise 23.02

This class diagram represents a student with a grade from the Danish 7-point scale:



a) Implement a runtime exception class called `IllegalGradeException`.
b) Implement the `Student` class, and make the class throw an `IllegalGradeException` if the grade is not a valid grade in the constructor and in the `setGrade()` method.
c) Make a test program that tests your class. Remember to catch the IllegalGradeExceptions that might be thrown.

Exercise 23.03

Find one of your previously implemented `MyDate` classes, and then:

a) Create an exception class `IllegalDateException`.
b) Change the set methods so they will throw an `IllegalDateException` if the resulting date would be an invalid date.
c) Make a test program that tests `MyDate`.

Exercise 23.04

[Gaddis] Programming Challenges 1+2, p. 757