Programming Assignment #3

More Decisions

1- Leap Year

A year with 366 days is called a leap year. A year is a leap year if it is divisible by 4 (for example, the year 1980), except it is not a leap year if it is divisible by 100 (for example, the year 1900); however, it is a leap year if it is divisible by 400 (for example, the year 2000).

There were no exceptions before the introduction of the Gregorian calendar on October 15, 1582 (for example, the year 1500 was a leap year). Write a program that asks the user for a year and computes whether that year is a leap year or not.

Hint: This is the same example in the previous assignment but here we want to implement it using only ONE if statement using and/or operators.

Here are some sample runs of such a program:

```
Enter the year then press Enter : 1500

Leap year: 1500



Enter the year then press Enter : 1900

1900 not a leap year!



Enter the year then press Enter : 1996

Leap year: 1996



Enter the year then press Enter : 1997

1997 not a leap year!



Enter the year then press Enter : 2000

Leap year: 2000
```

2- Calculator

Write a Java program that designs a calculator. The program should read from the user two integer numbers and a character which indicates the type of operation desired.

Hint: This is the same example in the previous assignment but here we want to implement it using only SWITCH CASE statement because switch case will be faster than if statement.

Operation	Desired output
+	Sum of two integers is calculated
-	Difference of two integers is calculated
*	Product of two integers is calculated
/	The quotient of the division of two integers is calculated
%	The remainder of the division of two integers is calculated

3- Game

Assume we want to implement a football game. A player can do the following:

- Press "w" Move up

- Press "s" Move down

- Press "d" Move right

- Press "a" Move left

- Press "k" or "j" Kick the ball

- Press "p" Pass the ball

- Press "o" Over the ball

   This should be case insensitive so when user inputs "w" or "W", it should move up. This should apply for all entered letters; both upper and lower case characters should work.

   Write a program that reads an input character and prints the proper movement depending on the input character.

   Hint: It should be implemented using switch case statement.

Write a program that reads two integer numbers (year, month) and prints the number of days of a particular month in a specific year.

Here are some sample runs of such a program:

Year:

1997

Mon th:

3

31 days

Year:

1700

Month:

2

28 days

Year:

1500

Month:

2

29 days