BDSA2021 - Assignment01

Freyja Weile (krwe@itu.dk)

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The Leap Year Function is an algorithm designed to determine whether or not a given year is a leap year.

As pictured in the below figure, it does this by examining a user input, there is some error-handling in place, such that only certain inputs are accepted. For instance, if the input is:

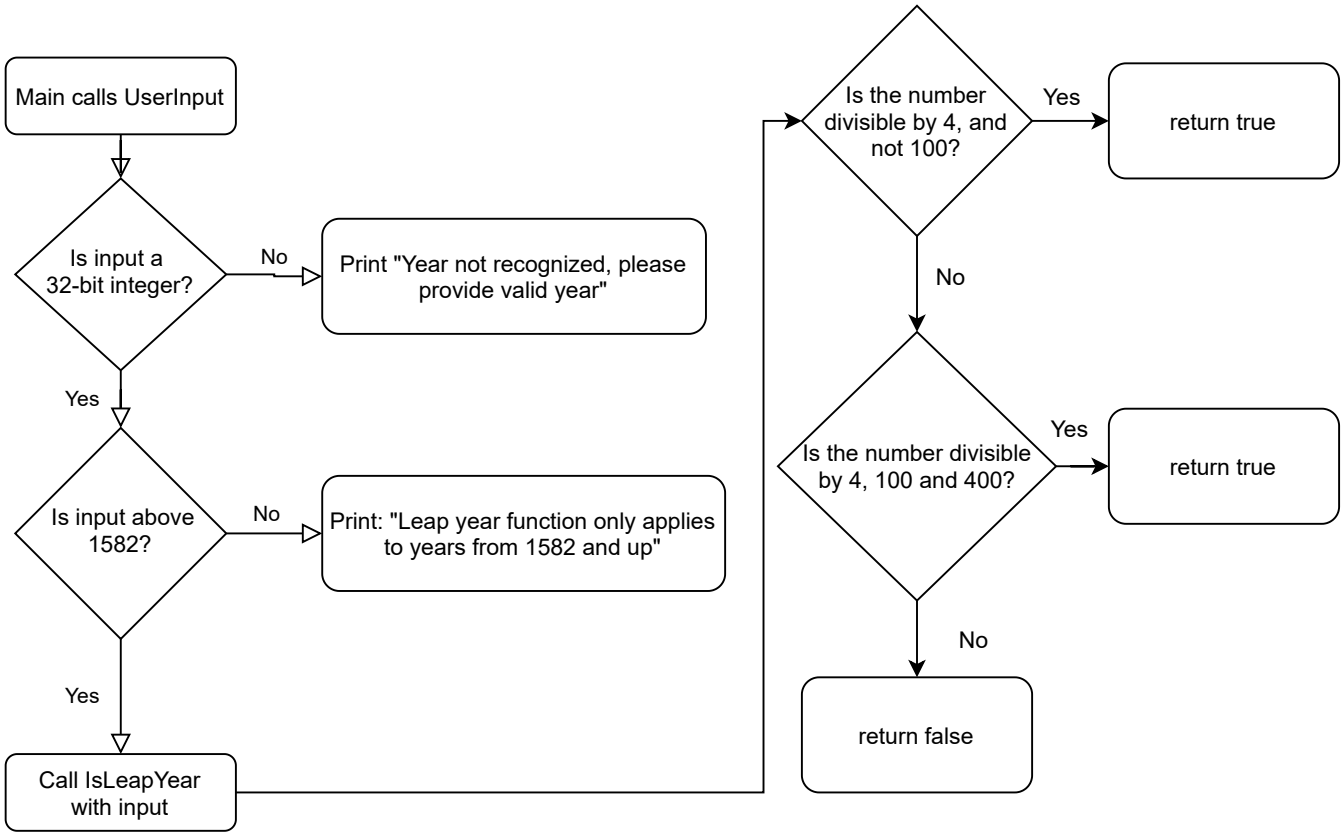
1. A string that cannot be parsed to an integer
2. An integer below 1582
3. An integer above what a 32-bit integer is capable of

The program will print either of the following error messages, depending on the the input:
"Leap year function only applies to years from 1582 and up"
or
"Year not recognized, please provide valid year"
Should the input meet all the requirements, it moves on to the actual "IsLeapYear" method, where it runs the input through a number of conditions.

The first condition is to check whether the number is divisible by 4, and not by 100. If it is, then the method will return true.

The second condition is to check that if the number is divisible by 4, is it also divisible by 100 and 400? If it is, then the method will return true.

If these conditions are not met, the method will return false, meaning that the given input does in fact not satisfy the requirements to be a leap year.


Main calls UserInput
Is input a 32-bit integer?
No
Print "Year not recognized, please provide valid year"
Yes
Is input above 1582?
No
Print: "Leap year function only applies to years from 1582 and up"
Yes
Call IsLeapYear with input
Is the number divisible by 4, and not 100?
Yes
return true
No
Is the number divisible by 4, 100 and 400?
Yes
return true
No
return false