

BDSA Assignment 0

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1 Task 9 - Diagram and explanation

Following the flowchart, this is an in-depth explanation of the journey, from start to end of the program.

First the user has to input a value, consisting of a number. This value is of the form string. The method *Main* then tries to convert the string value to an integer value using *Int32.TryParse()* method, which returns a boolean. If the method returns false, *Main* prints "*Invalid, input must not contain decimal numbers or letters*" and end the program as seen in *Figure 1*. If the method returns true, it will save the converted value as an integer variable.

After returning true, the *Main* will check whether or not the year variable is above or below 1582. If it is below, *Main* prints "*Invalid, year must be above 1581*" and end the program, as seen in *Figure 1*.

If the value of the variable *year* is above 1581, it will execute the *IsLeapYear(int year)* method, which returns true or false based on whether or not the input is considered a leap year, and it is done as so: Looking at the flowchart, it is clear that it has 3 dependencies, which is used to decide whether or not the method *IsLeapYear(int year)* should return true or false. The checks act as follows:

If *year* is divisible by 4, it will then continue and check if *year* is divisible by 100. If *year* is divisible by 100, the method will then check if *year* is divisible by 400. If that is the case, then the method *IsLeapYear* return true. If it is not the case, the method return false.

If *year* is not divisible by 100, the method returns true.

If *year* is not divisible by 4, the method return false.

The *Main* method then prints a line of text, that is dependant on whether or not the method call to *IsLeapYear* return true or false.

If the call to *IsLeapYear* return false, the method *Main* will print the line "*oh no*".

If the call to *IsLeapYear* on the other hand returns true, the method *Main* will print the line "*yay*".

After printing the line of text in the terminal, the program will end and hence end the user journey until it is run again.

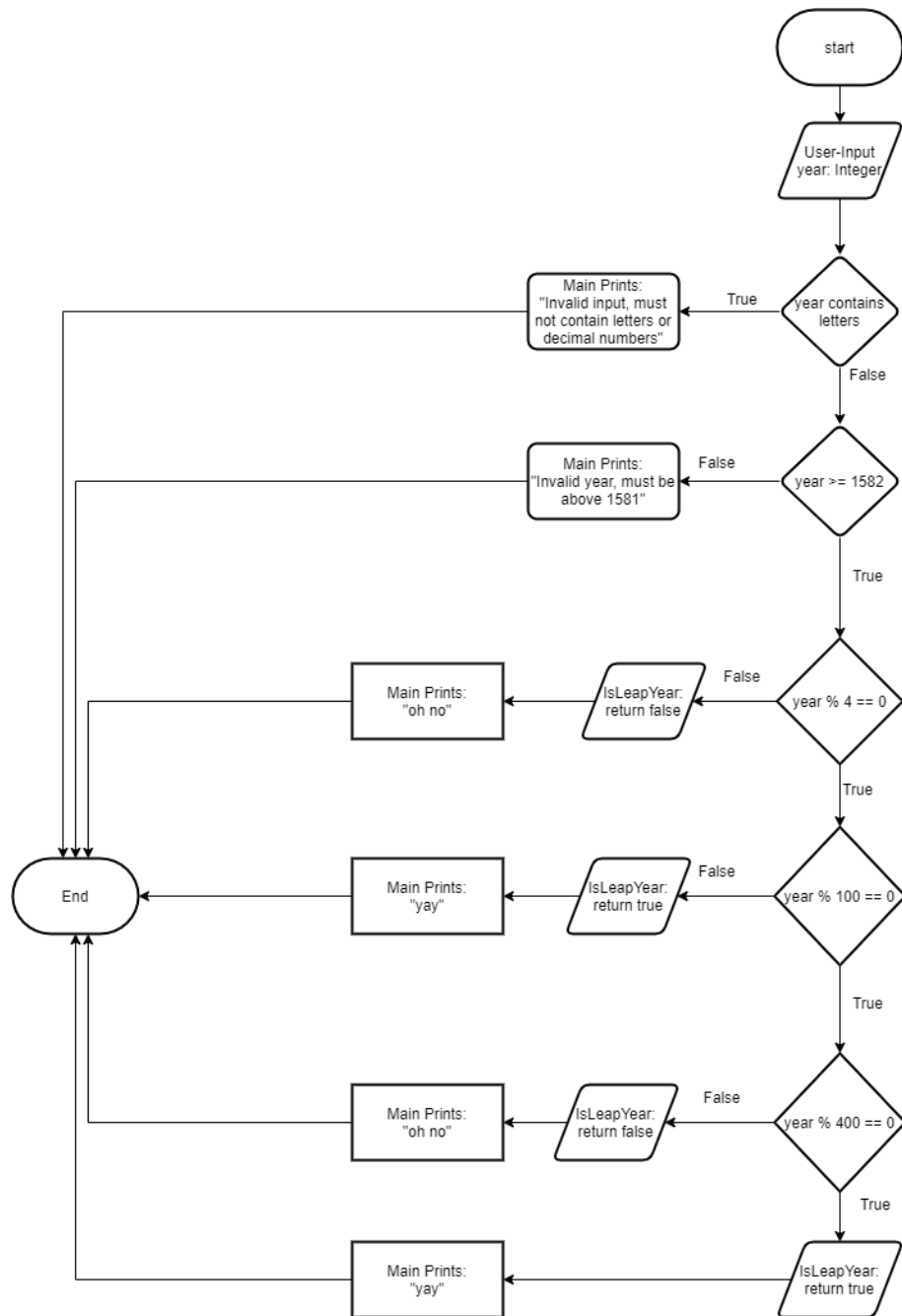


Figure 1: Flowchart of IsLeapYear method