

Assignment 0 - BDSA 2021

Thomas Schauser (hasc)

September 9, 2021

In this assignment a function named `IsLeapYear` was required. The function is required to return a boolean value, if a given year is a leap year or not.

A year is by definition a leap year if it is divisible by 4. However it is not a leap year if it is divisible by 100, except if the year is divisible by 400. The program should also ignore all years below 1582.

In figure 1 a visual representation of the state flow is illustrated. The first check occurring validates that the year is above 1581. If this requirement is not met, the program throws a custom exception. If the year is above 1581, the program check if the year is divisible by 4. In case that it is not divisible by 4, the function returns false. If the year is divisible by 4, it then checks if the year is not divisible by 100 or if it is divisible by 400. If both are false the year is not a leap year and the function returns false. In case at least one is true, the program returns true, since the year must then be a leap year.

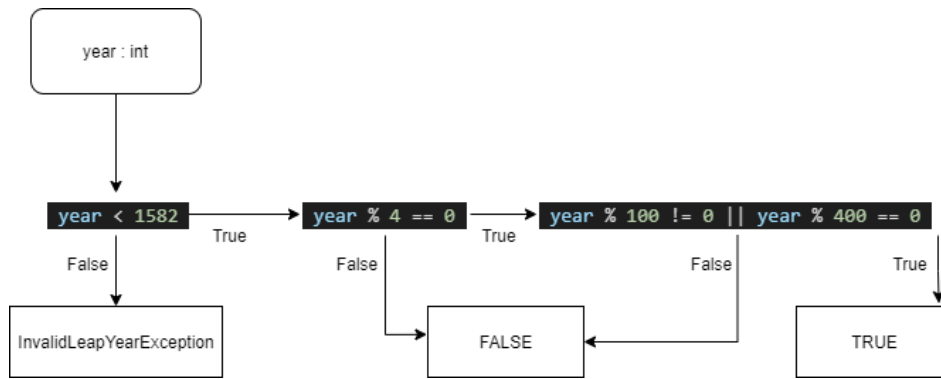


Figure 1: Diagram of `IsLeapYear` function.