BDSA assignment 00

Lucas Alexander Bjerre Fremming (lufr@itu.dk)

September 2022

1 Algorithm

1.1 UserInput

1.1.1 Illustration

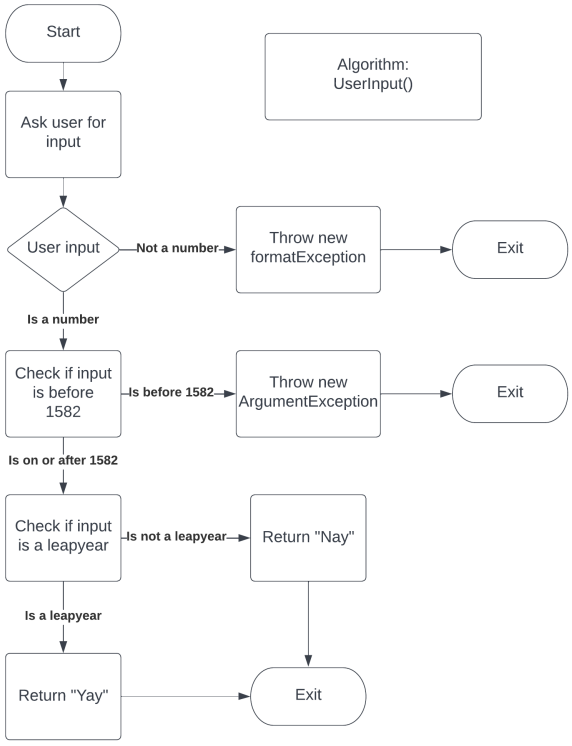

Figure 1: Figure 1

1.1.2 Explanation

The algorithm shown in (fig. 1) is created, to prompt the user for a input in form of a year, and will then respond with wether or not, the given year is a leap year. It starts by the user running the program, in the start (top) of the flowchart. They're then prompted to give an input, which will be checked to assure that it is an integer. If this is not the case the program will throw an *FormatException* and terminate.
If the given input is an integer the algorithm will then check if the number is lower than 1582 as this were an additional restraint for the program. If this is the case the program will throw an *ArgumentException* and terminate.
If the number is higher or on 1582 the algorithm will then check if it is a leapyear.
A leapyear is defined as:
`Every year that is exactly divisible by four is a leap year, except for years that are exactly divisible by 100, but these centennial years are leap years if they are exactly divisible by 400. For example, the years 1700, 1800, and 1900 are not leap years, but the years 1600 and 2000 are.`
Considering these restraints the program will finally either print *"yay"* or *"nay"* and terminate. Determined on wether or not the number is a leapyear by the aforementioned definition.