BDSA Assignment 0

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1 Explanation of algorithm

The input is first passed to the algorithm and then goes through several steps of validation: The input the user passes will be in the format of a string, but to use test whether it is a leap year, we need an integer. As such, we attempt to convert it to a integer and catch exceptions. Exceptions here also let us know that the input the user passed was not a pure integer, and we prompt them to give a new input in the permitted format. After conversion of the input assuming it was successful, we test if the inputted integer is below or equal to 1582. If it is, we throw an exception. This exception is caught and prompt them to give a new input in the permitted format.

The algorithm then decides if the input is a leap year based on the rules that every fourth year is a leap year, so long as it *is not* divisible by 100, unless it *is* divisible by 400. This is achieved with a single logical statement in a ternary operator.

Assuming all validation passed we print "yay", otherwise we print "nay"

2 Diagram

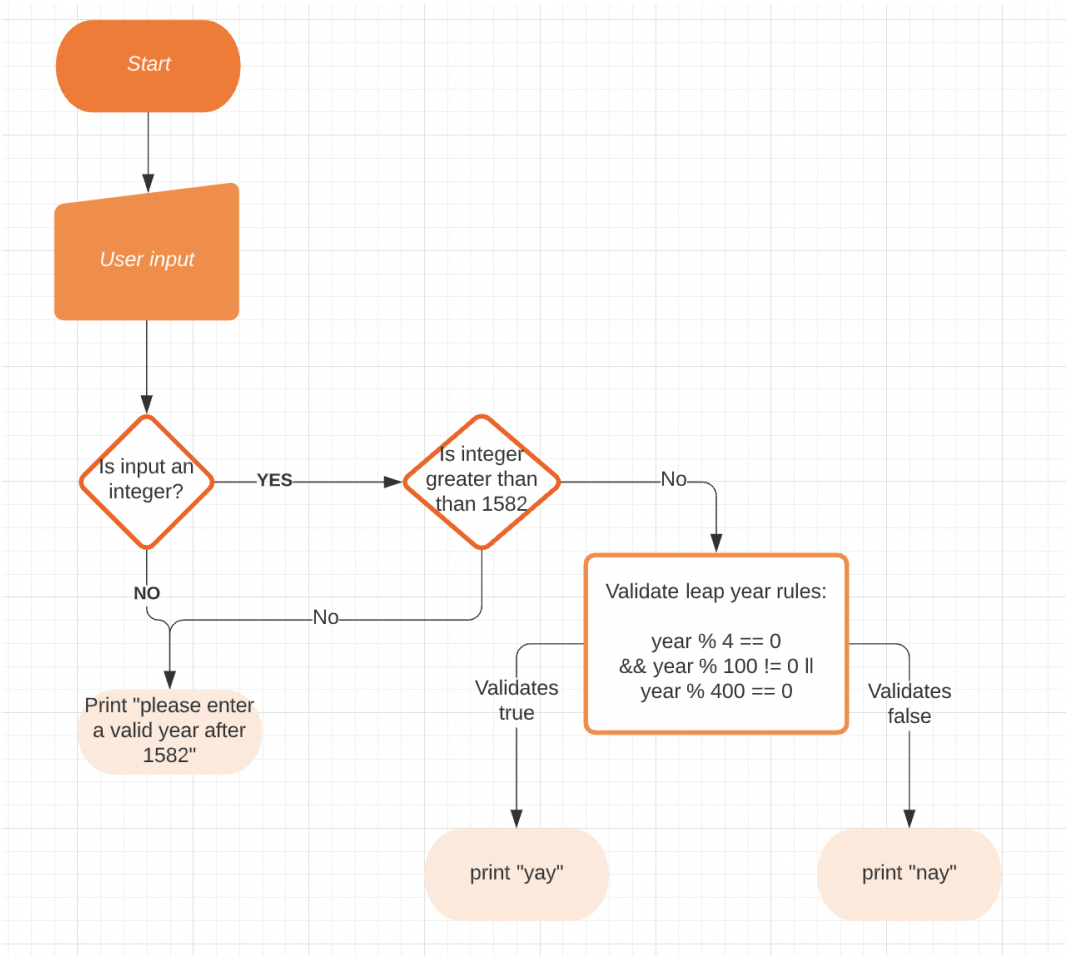

Figure 1: the algorithm.