# 1 IsLeapYear algorithm

## 1.1 Algorithm description

The algorithm is implemented by the method *Calendar::IsLeapYear*. It takes a single parameter – `year` of type `int`. The algorithm then has three *guard clauses* and a default return value, that is stepped through as follows:

**Step 1:** If the input year is less than 1582, an exception of type `NotSupported` is thrown. The algorithm terminates.

**Step 2:** If the input year is not evenly divisible by 4, go to step 6. If it is, go to step 3.

**Step 3:** If the input year is evenly divisible by 100, go to step 4. If not, go to step 5.

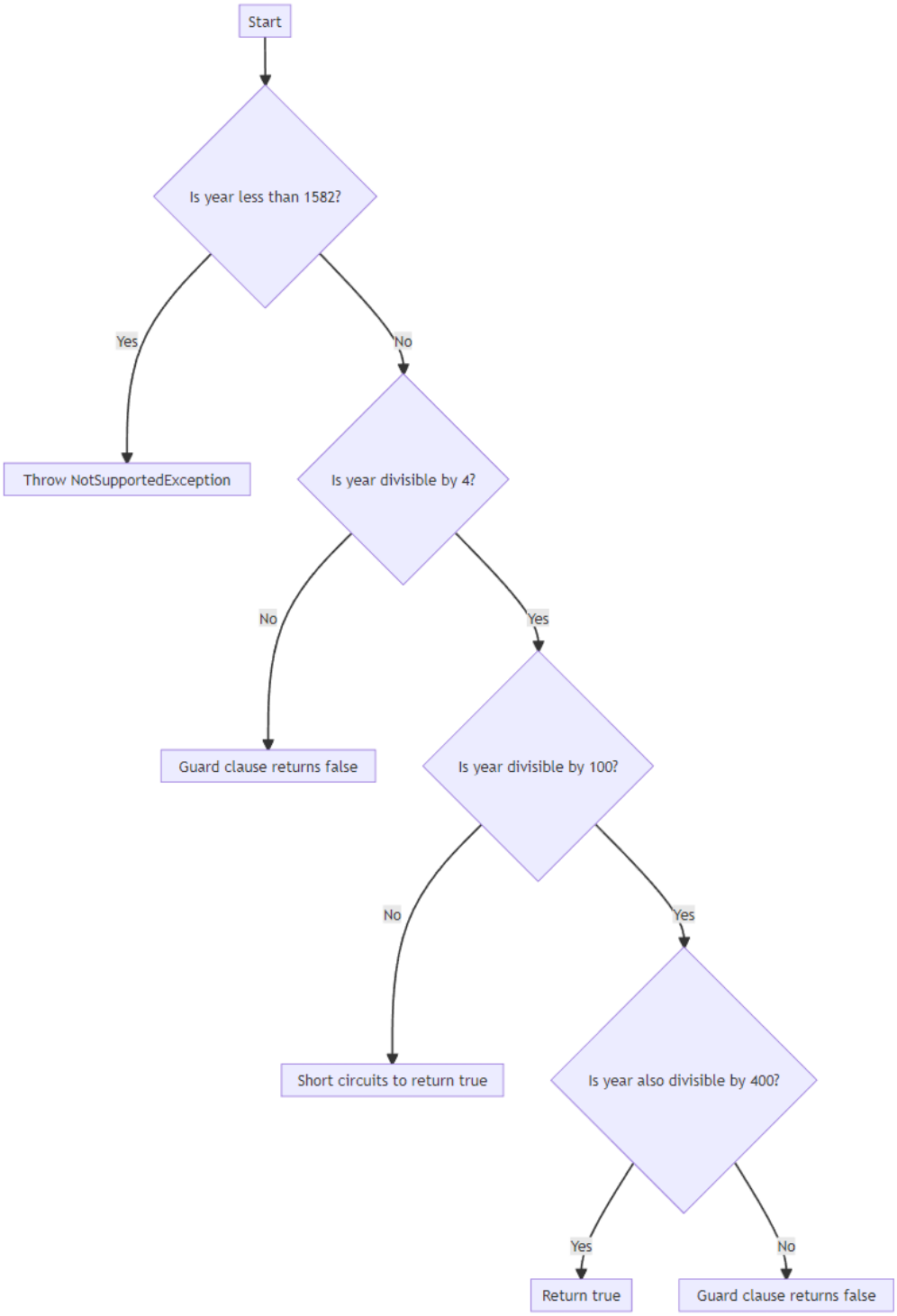
**Step 4:** If the input year is not evenly divisible by 400, go to step 6. If it is, go step 5.

**Step 5:** The year is a leap year – return true and terminate.

**Step 6:** The year is not a leap year – return false and terminate.

This is illustrated in a flowchart on the next page.

## 1.2 Diagram


Start
Is year less than 1582?
Yes
No
Throw NotSupportedException
Is year divisible by 4?
No
Yes
Guard clause returns false
Is year divisible by 100?
No
Yes
Short circuits to return true
Is year also divisible by 400?
Yes
No
Return true
Guard clause returns false