Assignment #00

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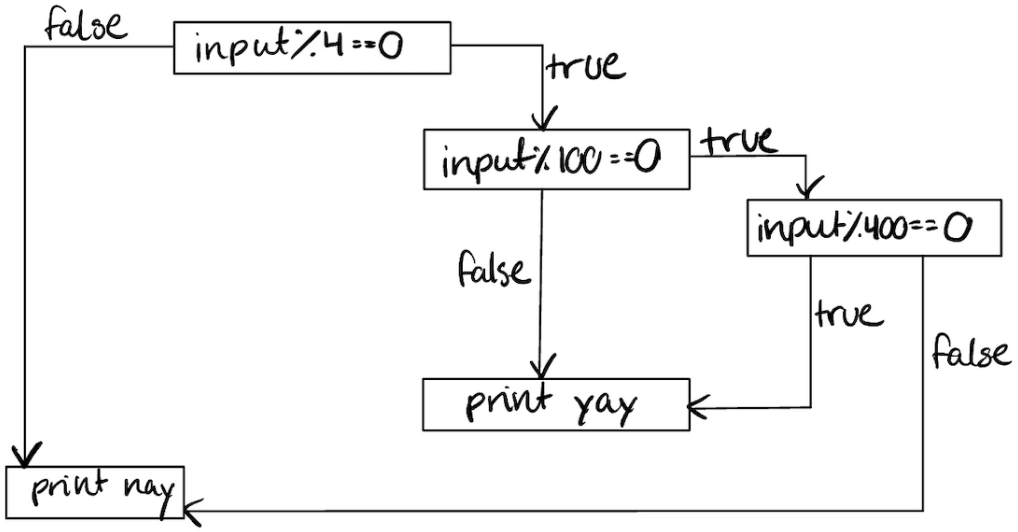
The following State diagram explains how the method `bool IsLeapYear(string input)` works. If the valid input%4 evaluates to false, the algorithm stops and prints nay. If it evaluates to true, the algorithm goes on to the next check. If the input%100 evaluates to false, the algorithm stops and prints yay. If it evaluates to true, the algorithm goes to the next check. If the input%400 evaluates to false, the algorithm stops and prints nay. If it evaluates to true, the algorithm finally prints yay.

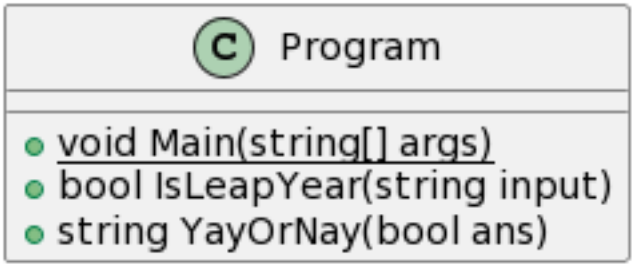


Below is the UML diagram of the program built in Assignment #00. The `Program` class has three different methods that are described as follows:

`void Main(string[] args)` is the main method, which starts the program. Using a try-catch block, the method reads the user input. If an exception is raised, the catch-block catches it and prints the error.

`bool IsLeapYear(string input)` firstly checks if the input is a valid integer, if not, throws an FormatException. Secondly, the method parses the input to an integer and checks if the input is a year > 1582, if not, it throws an ArgumentOutOfRangeException. After ensuring the input is a valid integer and year, the method checks if the input is a leap year, using if-statements and modulo. The method returns true if the year is a leap year and false if it is not.

`string YayOrNay(bool ans)` uses the result from the `bool IsLeapYear(string input)` function to convert it into a string for the user to read. If the function evaluates to true, the method returns "yay". If the function evaluates to false, the method returns "nay".


Program
void Main(string[] args)
bool IsLeapYear(string input)
string YayOrNay(bool ans)