BDSA: Assignment 0 - LeapYear

Asger Clement Nebelong Lysdahl *asly@itu.dk*

September 8, 2022

1 Introduction

This assignment was written in relation to our course: "Analysis, Design and Software Architecture". The main goals of this assignment, is to get to know Microsoft's .NET 6 Core along with C# 10. Moreover, it aims at familiarizing us with Version control. It teaches us to set up a Git Repository, Clone it, commit and pushing to a remote branch. Another aspect is to get a taste of Test Driven design. Test Driven design is when you approach a problem by writing a test (that fails), before any actual code is written, and then attempt to make the test pass by writing the correct code after. I used this approach through out the assignment.

2 The Program

The program Leap Year consist of a few parts: It reads input from the command line, validates it with a regular expression, executes a do-while-loop until a valid year is entered, and finally checks if that year is in fact a leap year.

In the state diagram, we can easily follow all paths that the program can take and states that can change. The program has one Entry point and one final End point. It executes the do-while-loop until it reads a valid input that is not null and matches with the regular expression. If it finds it, it tries to parse the input to an integer. Here it can either succeed (be true) or fail(be false). If it's false it returns, but if it is true, it calls the IsLeapYear function on the number. If it is false it will prompt the user "Nay", and if it's true it will prompt the user "Yay".
The Diagram can be seen on the next page.

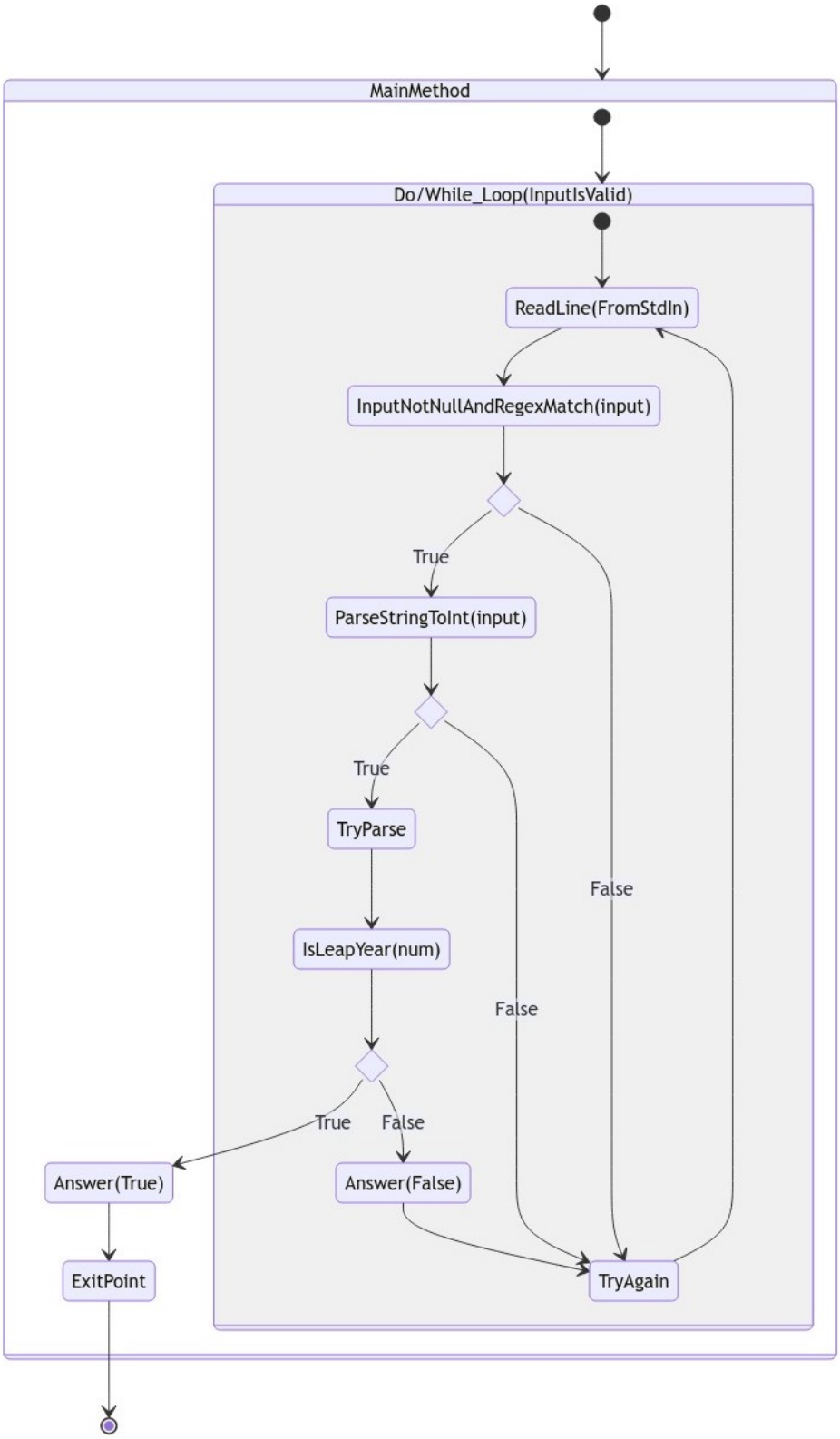

Figure 1: State Diagram of LeapYear program.