Tic-Tac-Toe

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Project Duration (28-05-2020) – ()

Table of Contents

[Project Requirements & specifications 1](#_Toc42089899)

[Must have(s) 1](#_Toc42089900)

[Nice to have(s) 2](#_Toc42089901)

[Rules of the game 2](#_Toc42089902)

[ServerAPI 2](#_Toc42089903)

[Tic-Tac-Toe 2](#_Toc42089904)

[Time spent 2](#_Toc42089905)

[References and tools used 3](#_Toc42089906)

[Tools 3](#_Toc42089907)

[References 4](#_Toc42089908)

[Installation Guide 4](#_Toc42089909)

[How to install 4](#_Toc42089910)

# Project Requirements & specifications

## Must have(s)

* Single and multiplayer option
  + Single player should be controlled from one pc.
    - Play with yourself.
  + Multiplayer should be played from two different pc’s
    - Players playing in multiplayer mode will have to wait for another player to join.
* Gameplay over the internet (possibly in a browser)
* **A player loses the game if** the following happens:
  + If a player leaves the website (reload or closes the browser) he/she will lose the game.
  + The player did not get three in a row.
  + The game ended in a tie.
* Point system:
  + **If the game ends in a tie,** +o pointswill be given to both players.
  + **If a player wins**. +1 pointwill be given.
  + **If a player Loses**. +o pointswill be given.
* You cannot do the following.
  + Change display name while in a game.
  + Change game mode while playing a game.

## Nice to have(s)

* Login feature to track your game score across games.

## Rules of the game

This game is a turn-based game. This mean that after ‘player 1’ have made a move, the turn will go to ‘Player 2’.

The first player that gets three in a row (of their own symbol) wins the game/round.

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# ServerAPI

The ServerAPI is made to connect two players in a game of Tic-Tac-Toe

**Languages:** C#

**Framework:** .Net Core 3.1

**ORM** *(object-relational mapper)***:**  ASP .NET Core Web Application

**NuGet packages:**

|  |  |  |
| --- | --- | --- |
|  |  | Version |
|  |  | Version |

# Tic-Tac-Toe

‘Tic-Tac-Toe’ is a webpage build to run the game Tic-Tac-Toe

**Languages:** C#

**Framework:** .Net Core 3.1

**ORM** *(object-relational mapper)***:**  WPF

**NuGet packages:**

|  |  |  |
| --- | --- | --- |
|  |  | Version |
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# Time spent

* **28/05/2020 - 31/05/2020** - approximately (9 hours and 30 minutes)total
  + Planning,
    - Setting up my documentation structure
    - Planning how I will build the program and what to build it with.
  + Building diagrams
    - Mock-up image
    - Flowchart
    - Class Diagram

All diagrams were made using draw.io: <https://www.draw.io/>

* **31/05/2020** - approximately (33 minutes) total
  + Creating the project types that was planed in the previous step
  + Setting up a GitHub Repository so the project uses version control.
  + Setting up the Project environments
* **31/05/2020 – 01/06/2020** - approximately (8 hour 30 minutes) total
  + Reading Up on some of the WPF functions
  + Making a basic UI
  + Wrote further documentation as a went.
  + Updating my Class Diagram
  + Working on the Single player mode
* **02/06/2020** – approximately (14 hours 30 minutes) total
  + Re-structuring the game application
  + Separating single player and multi-player into separate windows.
  + Building an application launcher. For the single-player and multi-player windows.
  + Making a dynamic ‘gameLogic’ Class that can be used in both   
    a single player and multi-player game.
* **03/06/2020** - approximately () total.

# References and tools used

## Tools

* Draw.io – Used for making all my diagrams.   
  <https://www.draw.io/>
* Visual Studio 2019 – Used for making the whole project   
  <https://visualstudio.microsoft.com/vs/>
* Google Translate – Used for correcting most of my spelling errors  
  <https://translate.google.dk/?hl=da&tab=TT>

## References

* Inspirational YouTube Videos:
  + <https://www.youtube.com/watch?v=_OUs2kuI_Yo>
  + <https://www.youtube.com/watch?v=yq0dSkA1vpM>
  + <https://www.youtube.com/watch?v=7CkSJyZb6H0>
  + <https://www.youtube.com/watch?v=mnTyiUAHuVk>
  + <https://www.youtube.com/watch?v=sYKrMPhl59A>
  + <https://www.youtube.com/watch?v=STuWW6pksXs>
  + <https://www.youtube.com/watch?v=laPFq3Fhs8k>
  + <https://www.youtube.com/watch?v=MiafbSe0Z5Q>
* Inspirational Websites:
  + <https://developer.okta.com/blog/2019/11/21/csharp-websockets-tutorial>
* Inspirational Code:
  + <https://www.codeproject.com/Tips/1235350/Switch-Type-WPF-ToggleButton-RadioButton-On-Off-Co>
  + <https://www.youtube.com/watch?v=mnTyiUAHuVk>
  + <https://stackoverflow.com/questions/32420461/wpf-multiple-buttons-same-click-function-but-different-parameter>
  + <https://stackoverflow.com/questions/11133947/how-do-i-open-a-second-window-from-the-first-window-in-wpf>
  + <https://www.codeproject.com/Questions/80280/Show-Hide-the-Main-window>
  + <https://stackoverflow.com/questions/1195554/how-can-i-remove-the-border-of-a-wpf-window-when-using-luna-or-classic>
  + <https://stackoverflow.com/questions/7417739/make-wpf-window-draggable-no-matter-what-element-is-clicked>
  + <https://docs.microsoft.com/en-us/dotnet/api/system.appdomain.assemblyresolve?redirectedfrom=MSDN&view=netcore-3.1>
* Brainstorming my ideas with: (No code nor help was given by these people)
  + Emil Raj Schmidt - [emil4746@elevcampus.dk](mailto:emil4746@elevcampus.dk)
  + Jens Nissen - [jens047d@elevcampus.dk](mailto:jens047d@elevcampus.dk)
* Project Help:
  + Tommaso Briguglio - [tomm5517@elevcampus.dk](mailto:tomm5517@elevcampus.dk)   
    Helped out with quickly setting up a windows server in my home.  
      
    All help included of:   
    1. Transforming and transporting an older pc to my home.  
    2. Setting the pc up as a windows server (With a UI)  
    3. NAT & PORT forwarding on my home network.

# Installation Guide

## How to install