# **Project Documentation:**

## **Project Goal:**

A mini project, which consisted of building a fully functionable application users will be able to login, register and play tic tac toe game. Being able to view Highscores retrieved from SQL database. The goal was to achieve to LMVP. The application was built within a tightframe of 4 days of planning and development. Here below are documentations which supports the project.

## **Start point:**

1. Creating Database and Tables for the project: Users, Highscores, Scores
2. Able to login and register
3. Once logged in, Tic Tac Toe game can be played
4. View Instructions
5. View Highscores

## **Code Structures:**

* Graphical User Interface (GUI)
* Database Layer
* Game Logic Layer

## **Definition of Done:**

* Users can Login and Register on the application
* Users can view Highscores to view scores
* Users can play Tic Tac Toe game with an implemented score system

## **Product Backlog:**

**User Stories:**

* As a user I want to be able to save my scores to be the best
* As a user I want to be able to change the colour of my snake
* As a user I want to be able to quit if I don’t want to carry on with the game.
* As a user I want to be able to name my character
* As a user I want to be able to view Highscores to beat
* As a user I want some sound playing while playing the game
* As a user I want to be able to see instructions of the game
* As a user I want to be see an appealing interface
* As a user I want to be able to track my score while playing the game

Based on these requests I had to design and visualise a picture in my head how the Application would look.

## **Sprint 0:**

### **Sprint goal:**

* Create database and tables of App Users, Highscores, Scores
* Build Visual Studio Applications with WPF and build interfaces
* Start Documentation and create product backlog

### **Sprint Review:**

* Completed creating the product backlog list for project and created the database and tables for project.
* Blocker: Managed to create the application but haven’t built any interfaces due to excess amount time spent to perfect documentation

### **Sprint Retrospective:**

* Created the product backlog which had a vital effect for the application development and used a burned chart.

**Improvements:**

* Work at a faster pace to get more work completed

**Action plan for next sprint:**

* Start and Finish all the GUI for the application
* Connect application to the database using Entity Framework
* Have a MVP by the next sprint

## **Sprint 1:**

* As a user I want to be able to see instructions of the game
* As a user I want to be see an appealing interface
* As a user I want to be able to view Highscores to beat

### **Sprint goal:**

* Create all the GUI pages for the application
* Have a starter code for the game
* Connect database using Entity Framework

## **Sprint Review:**

* Achieved all the requirements set during this sprint
* Blocker: haven’t completed any the game logic fully and has recurring errors within the game

## **Sprint Retrospective:**

* Managed to complete overall application with working buttons and functionalities
* Worked effectively to meet sprint majority of sprint goals

**Improvements:**

* Need to make sure the game logic of the tic tac toe works
* Being able to retrieve information from the database using the queries

**Action plan for next sprint:**

* Finish the game and connect everything to sql database
* Use LINQ commands and use version control

## **Sprint 2:**

### **Sprint goal:**

* Finishing game logic of tic tac toe
* Implement Highscores functionality page
* Connect database using Entity Framework with LINQ commands

## **Sprint Review:**

* Achieved all the requirements and produced an MVP this sprint
* Blocker: had issues implementing score system into the game and had to hardcode SQL into the application but managed to make LINQ commands work for login page. Also not being able to run tests.

## **Sprint Retrospective:**

* Managed to complete overall application with working buttons and functionalities and meeting the MVP requirements
* Worked effectively to meet sprint majority of sprint goals, excess amount of time spent to workout game logic and LINQ functionality utilised for registration and login page.

**Improvements:**

* Need to make sure the game logic of the tic tac toe works
* Having a registration functionality implemented using LINQ.

**Overall Retrospective**

During this project, I have learnt how vital it is to use GitHub, as I kept having issues with the project, it makes it easy to retrieve files that you have previously committed into the version control system. What I would do differently in future projects, I would get the simple activities out of the way such as using the Eisenhower model to prioritise activities then proceed with the harder activities as I felt I spent a lot of time on fixing the hard challenges and struggled to finish with the simple tasks. Next, I am planning to implement a score system within the Tic tac toe GUI, as well as to be able to connect users score and username linked together into a database and can be retrieved once the score has been set. Overall, the project was a good product but there is always room for improvements because I was able to achieve my goal of achieving an MVP.