**Product Specifications**

Table of Contents:

[Modification History 4](#_Toc444340655)

[Major Milestones 5](#_Toc444340656)

[Abstract 6](#_Toc444340657)

[Document References 7](#_Toc444340658)

[Glossary 8](#_Toc444340659)

[Class Diagram 9](#_Toc444340660)

[Use Case Sequence Diagram 10](#_Toc444340661)

[Use case 1 10](#_Toc444340662)

[General Description 10](#_Toc444340663)

[Sequence Diagram 10](#_Toc444340664)

[Use case 2 10](#_Toc444340665)

[General Description 10](#_Toc444340666)

[Sequence Diagram 10](#_Toc444340667)

[Use case 3 10](#_Toc444340668)

[General Description 10](#_Toc444340669)

[Sequence Diagram 10](#_Toc444340670)

[Use case 4 10](#_Toc444340671)

[General Description 10](#_Toc444340672)

[Sequence Diagram 10](#_Toc444340673)

[Use case 5 10](#_Toc444340674)

[General Description 10](#_Toc444340675)

[Sequence Diagram 10](#_Toc444340676)

[Use case 6 11](#_Toc444340677)

[General Description 11](#_Toc444340678)

[Sequence Diagram 11](#_Toc444340679)

[Use case 7 11](#_Toc444340680)

[General Description 11](#_Toc444340681)

[Sequence Diagram 11](#_Toc444340682)

[Use case 8 11](#_Toc444340683)

[General Description 11](#_Toc444340684)

[Sequence Diagram 11](#_Toc444340685)

[Use case 9 11](#_Toc444340686)

[General Description 11](#_Toc444340687)

[Sequence Diagram 11](#_Toc444340688)

[Use case 10 11](#_Toc444340689)

[General Description 11](#_Toc444340690)

[Sequence Diagram 11](#_Toc444340691)

[Use case 11 12](#_Toc444340692)

[General Description 12](#_Toc444340693)

[Sequence Diagram 12](#_Toc444340694)

[Use case 12 12](#_Toc444340695)

[General Description 12](#_Toc444340696)

[Sequence Diagram 12](#_Toc444340697)

[Use case 13 12](#_Toc444340698)

[General Description 12](#_Toc444340699)

[Sequence Diagram 12](#_Toc444340700)

[User Interface 13](#_Toc444340701)

[Others 14](#_Toc444340702)

# Modification History

2/26/2016 - Use Case Diagram modified to accommodate guest user specifications and history record.

2/26/2016 – Edited for consistency and clarity

# Major Milestones

|  |  |
| --- | --- |
| **Date** | **Milestone** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

# Abstract

Tic-Tac-Toe is a two-player game, played on a 3x3 grid, where the winner is the first player to connect three in a row. Despite its simplicity, it is a good exercise for improve reasoning skills. Due to this, it is considered a good game for children to help them improve their acumen. The game was originally played on paper, and was one of the first games played on a computer. The purpose of this project is to develop a new version of the game utilizing a 6x6 grid and in which the winner is the player with the most 4 in a row squares once the entire board is filled.

# Document References

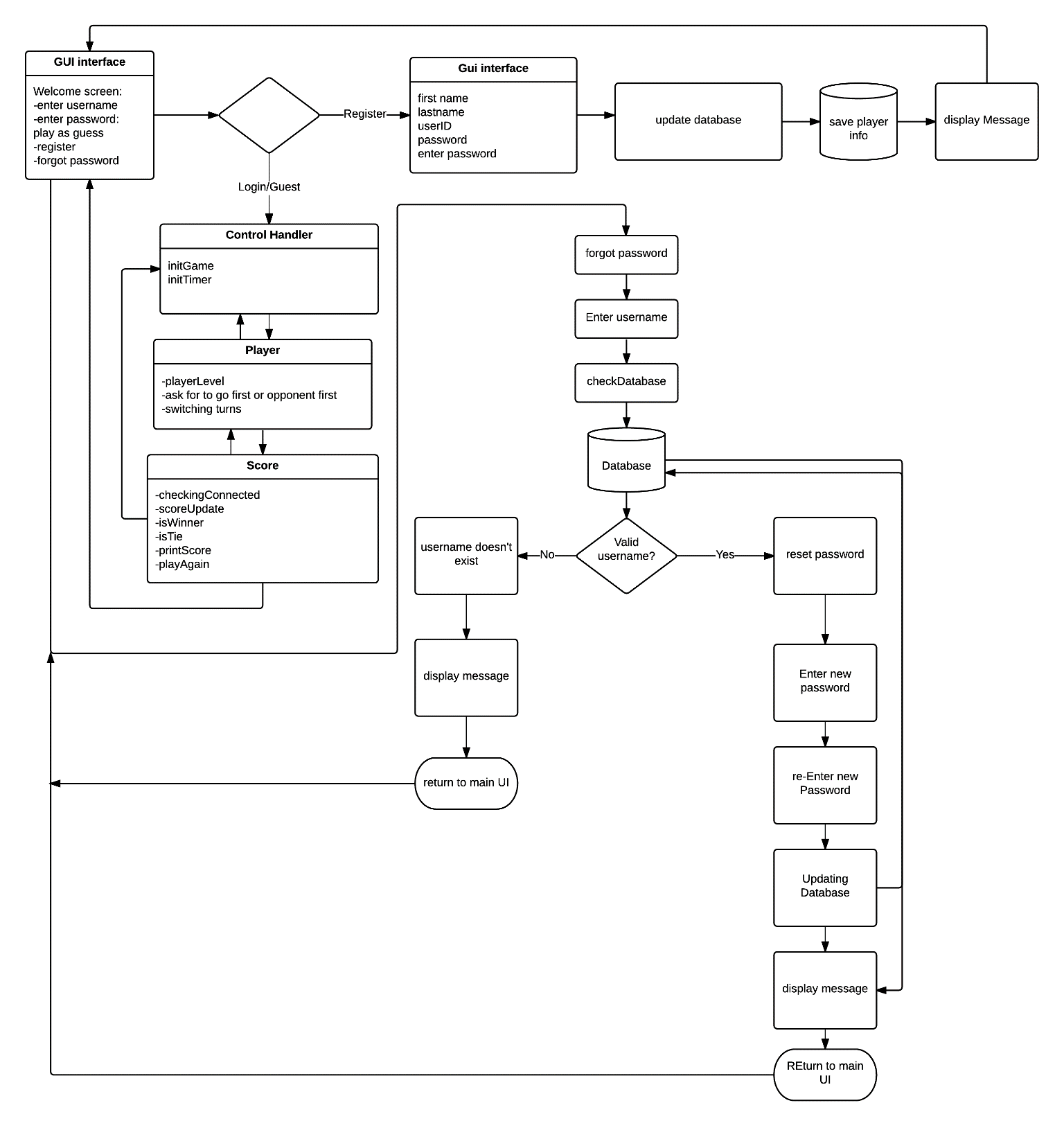
|  |  |
| --- | --- |
| **Document** | **Location** |
| Requirements | GitHub |
| Software Management Plan | GitHub |
| Specifications | GitHub |
| Minutes and Time Log | GitHub |

# Glossary

|  |  |
| --- | --- |
| **Term** | **Definition** |
| Graphical User Interface | A graphical user interface is a human-computer interface (i.e., a way for humans to interact with computers) that uses [windows](http://www.linfo.org/window.html), [icons](http://www.linfo.org/icon.html) and menus and which can be manipulated by a mouse (and often to a limited extent by a keyboard as well). |
| 6x6x4 grid | A grid with 6 boxes on each side (6x6), consisting of 36 total units. The winner is the player with the most 4 stones(x4) in a horizontal, vertical, or diagonal row. |
| Tic tac toe | A game for two players who take turns marking the spaces in a grid. The player who succeeds in placing three respective marks in a horizontal, vertical, or diagonal row wins the game. |
| Single Player | A single-player video game is a video game where input from only one player is expected throughout the course of the gaming session. "Single-player game" usually refers to a game that can only be played by one person, while "single-player mode" usually refers to a particular [game mode](http://en.wikipedia.org/wiki/Game_mode) that is designed to be played by a single player, though the game also contains modes that can be played by several players simultaneously. |
| Multi-player | A multi-player video game is a video game in which more than one person can play in the same game environment at the same time. Computer and video games are often [single-player](http://en.wikipedia.org/wiki/Single-player_video_game) activities that put the player against pre-programmed challenges and/or [AI-controlled opponents](http://en.wikipedia.org/wiki/Non-player_character), which often lack the flexibility and ingenuity of regular human thinking. |
| User | A user is an [agent](http://en.wikipedia.org/wiki/Intelligent_agent), either a human agent (end-user) or [software agent](http://en.wikipedia.org/wiki/Software_agent), who uses a [computer](http://en.wikipedia.org/wiki/Computer) or [network](http://en.wikipedia.org/wiki/Computer_network) [service](http://en.wikipedia.org/wiki/Service_(systems_architecture)). A user often has a user account and is identified by a username (also user name). Other terms for username include login name, screen name (also screenname), [nickname](http://en.wikipedia.org/wiki/Nickname#Computing), or handle |
| Password | A password is a secret [word](http://en.wikipedia.org/wiki/Word) or [string](http://en.wikipedia.org/wiki/String_(computer_science)) of [characters](http://en.wikipedia.org/wiki/Character_(computing)) that is used for user [authentication](http://en.wikipedia.org/wiki/Authentication) to prove identity, or for [access approval](http://en.wikipedia.org/wiki/Authorization) to gain access to a resource. |

|  |  |
| --- | --- |
| **Acronym** | **Meaning** |
| GUI | Graphical User Interface |
| AI | Artificial Intelligence |

# Class Diagram



# Use Case Sequence Diagram

## Use case 1

### General Description

Register – Register a new user

### Sequence Diagram

## Use case 2

### General Description

Login – Log in as existing user

### Sequence Diagram

## Use case 3

### General Description

Play as guest – Play a game without logging in. Does not track statistics.

### Sequence Diagram

## Use case 4

### General Description

Forgot password – Option to reset password.

### Sequence Diagram

## Use case 5

### General Description

View Statistics – View Wins/Loss record.

### Sequence Diagram

## Use case 6

### General Description

Clear history – Clear wins/Loss. Displays mocking notification of your abject failure.

### Sequence Diagram

## Use case 7

### General Description

Select game mode – Choose between PvP or PvA.

### Sequence Diagram

## Use case 8

### General Description

Select difficulty – Choose difficulty of AI: Easy, Medium, Hard.

### Sequence Diagram

## Use case 9

### General Description

Select color – Choose colors for stones used.

### Sequence Diagram

## Use case 10

### General Description

Select first player – Decide who will go first.

### Sequence Diagram

## Use case 11

### General Description

Move – Make a move.

### Sequence Diagram

## Use case 12

### General Description

Replay – Start a new game once a game ends.

### Sequence Diagram

## Use case 13

### General Description

Logout – Log user out so another user can log in or to play as guest.

### Sequence Diagram

## Use case 14

### General Description

Quit – Exit out of application.

### Sequence Diagram

# User Interface

# Others