**Requirements Document**

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The software product shall run 99.5 percent of the time. 14

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# Modification History

9/9/2014: Initial draft

10/7/2014: Refined use cases; and non-functional requirements.

10/21/2014: Refined use cases.

10/29/2014: Refined use cases.

11/2/2014: Refined use cases.

12/3.2014: Refined use cases.

# Domain Knowledge

## Glossary

|  |  |
| --- | --- |
| **Term** | **Definition** |
| Blue | Player 1 |
| Red | Player 2/AI |
| Grid | The playing board |
| Stone | Player Piece |
| Guest | Unregistered Player |
| Player | Registered Player |

## Interview with Client/Questioner/…

**Location: A630**

**Date: September 2, 2014**

**Time: 5:10pm**

**Attendees: Dr. Yuan**

**Description:**

*Question 1*: Does 5x5x4 mean 3D or 2D?

*Response*: The grid is 2D (5x5), 4-in-a-row to win

*Question 2*: Is history defined as play-by-play or user score

*Response*: User score

**Location: Outside UHD**

**Date: September 16, 2014**

**Time: 3:00pm**

**Attendees: John, Heather, Kris**

**Description:**

*Question 3*: Does there need to be an undo option?

*Response*: Yes

*Question 4*:How many difficulty levels do there need to be?

*Response*: Three (3)

*Question 5*: What platform do you want (i.e.: desktop, mobile, web, etc.)

*Response*: Mobile and computer.

*Question 6*: Can I delete my registration information?

*Response*: Yes

*Question 7*: Can I change my background?

*Response*: Sure

*Question 8*: Can it be played offline?

*Response*: Yes

*Question 9*: Does it need to display the history of the players or just the "current" player?

*Response*: Just the current player.

*Question 10*: Should player 2 have the option to “play as registered player”?

*Response*: No. It will default to “play as guest.”

# Functional Requirements

## Use Cases

### Use Case 1 - Start new game

|  |  |
| --- | --- |
| Goals of actor | Start new game |
| Tasks | 1. Prompt user to choose to play as registered user or guest 2. User chooses to play as registered user or guest 3. Prompt the user to choose number of players (1 or 2) 4. User chooses number of players (1 or 2) 5. Refer to “Pick who goes first” use case 6. Start a new game |
| Preconditions | Must choose to start new game or application is executed |
| Exceptions | If “new game” is chosen through the game menu:  3. Prompt the user to choose number of players (1 or 2)   1. User chooses number of players (1 or 2)   5. Refer to “pick who goes first” use case  6. Start a new game |
| Variation of action interactions | 2.1. If user chooses to play as registered user, refer to the “Play as registered user” use case  2.2. If user chooses to play as guest, refer to the “guest” use case  4.1. If user chooses 1 player, refer to “Pick difficulty” use case  4.2. If user chooses 2 player, refer to “Play as registered user” |
| System change/production |  |

### Use Case 2 - Pick difficulty

|  |  |
| --- | --- |
| Goals of actor | Pick difficulty |
| Tasks | 1. Prompt user with a selection of 3 difficulties (Easy, Medium, Hard) 2. User selects one of the 3 difficulties prompted |
| Preconditions | User must have selected to play the game as single player |
| Exceptions | N/A |
| Variation of action interactions | N/A |
| System change/production |  |

### Use Case 3 - Login

|  |  |
| --- | --- |
| Goals of actor | Login |
| Tasks | 1. Prompt user for username 2. User enters username 3. Check if the username exists 4. If the username exists prompt the user with dialog box to login or cancel |
| Preconditions | Player must have registered |
| Exceptions | * Username contains more than 25 characters * Username is blank * Username contains characters other than [a-zA-Z0-9 ] |
| Variation of action interactions | * 1. If the username does not exist prompt user with dialog box to register or try again |
| System change/production |  |

### Use Case 4 - Logout

|  |  |
| --- | --- |
| Goals of actor | Logout |
| Tasks | 1. User selects Main Menu 2. Main Menu is displayed 3. User chooses Logout 4. “Logged out” confirmation prompt 5. User confirms Logout 6. Refer to “Login” use case |
| Preconditions | While logged in during current game |
| Exceptions | N/A |
| Variation of action interactions | N/A |
| System change/production |  |

### Use Case 5 - Register

|  |  |
| --- | --- |
| Goals of actor | Register |
| Tasks | 1. Prompt user for username 2. User enters username 3. Check if the username does not exist 4. If the username does not exist prompt the user with dialog box to create a new user with the username inputted or cancel |
| Preconditions | Player must have chosen to register |
| Exceptions | * Username contains more than 25 characters * Username is blank * Username contains characters other than [a-zA-Z0-9 ] |
| Variation of action interactions | * 1. If the username exists prompt user with dialog box to login or try another username |
| System change/production |  |

### Use Case 6 - Play as guest

|  |  |
| --- | --- |
| Goals of actor | Play as guest |
| Tasks | 1. The user continues to play as guest |
| Preconditions | Player must have selected to play as guest and the user must be starting a new game |
| Exceptions | N/A |
| Variation of action interactions | N/A |
| System change/production |  |

### Use Case 7 - Game completed

|  |  |
| --- | --- |
| Goals of actor | Game completed |
| Tasks | 1. Refer to “update player history” use case 2. Prompt user if 1st player wins, 2nd player wins, or game results in a tie 3. User confirms message to start new game |
| Preconditions | Current game is finished (win, lose, or draw). |
| Exceptions | N/A |
| Variation of action interactions | N/A |

### Use Case 8 - Restart

|  |  |
| --- | --- |
| Goals of actor | Restart |
| Tasks | 1. The board is cleared of all stones 2. Previous options are still valid 3. Restarts game |
| Preconditions | N/A |
| Exceptions |  |
| Variation of action interactions |  |
| System change/production |  |

### Use Case 9 - Pick who goes first

|  |  |
| --- | --- |
| Goals of actor | Pick who goes first |
| Tasks | 1. Prompt user to choose who goes first 2. User chooses who goes first |
| Preconditions | A new game must be initialized |
| Exceptions | N/A |
| Variation of action interactions |  |
| System change/production |  |

### Use Case 10 - Place a stone on the board

|  |  |
| --- | --- |
| Goals of actor | Place a stone on the board |
| Tasks | 1. Actor selects the tile they wish to place their stone on. 2. Check if the tile selected is occupied 3. Place stone on tile selected 4. Refer to “Check if finishing move” use case |
| Preconditions | Game has started |
| Exceptions | N/A |
| Variation of action interactions | * 1. If the tile is occupied, return to 1 |
| System change/production |  |

### Use Case 11 - Display user history

|  |  |
| --- | --- |
| Goals of actor | Display user history |
| Tasks | 1. Player selects “User Name” from the Main Menu 2. Retrieve player-1’s record 3. Display history |
| Preconditions | 1. Player-1 is a registered player and started a game. |
| Exceptions | * Player-1 is playing as a guest. |
| Variation of action interactions |  |
| System change/production |  |

### Use Case 12 - Update user history

|  |  |
| --- | --- |
| Goals of actor | Update user history |
| Tasks | 1. Increment user history according to game outcome. |
| Preconditions |  |
| Exceptions | N/A |
| Variation of action interactions | * 1. If player won, increment win record   2. If player lost, increment loss record   3. If game is a draw, increment draw record |
| System change/production |  |

# Non-Functional Requirements

## Cost Constraints

N/A

## Platform Constraints

Works on multiple platforms (e.g.: Windows, IOS, Android)

## Reliability

## The software product shall run 99.5 percent of the time.

## Time Constraints

Must be completed by December 6, 2014.