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CS 3420 - Team Project Phase I - 2/23/2016

Overview:

Introduction and Domain knowledge, Non functional Requirements - Abby

Software Project Management Plan - Gabriel

Functional requirements, Use case diagram - Ryan

UI design and Workflow diagram- Dan

Class Diagram and Sequence Diagram - Sishir

Introduction

Our target product tfour game:

- Two player game, each player picks a stone color
- 6x6 board
- Multi-player or single player
- In single player: easy, medium, or hard mode
- In multi-player: players play against each other locally on the same computer
- Data about matches will be recorded
- Winner: most 4 stones in a row (horizontally, vertically or diagonally)

Domain Knowledge

Our product will be available on the windows platform

The user will be able to use a mouse and keyboard for input

The game does not have a target age group

The players can be new player, registered or guest player

Non functional Requirements

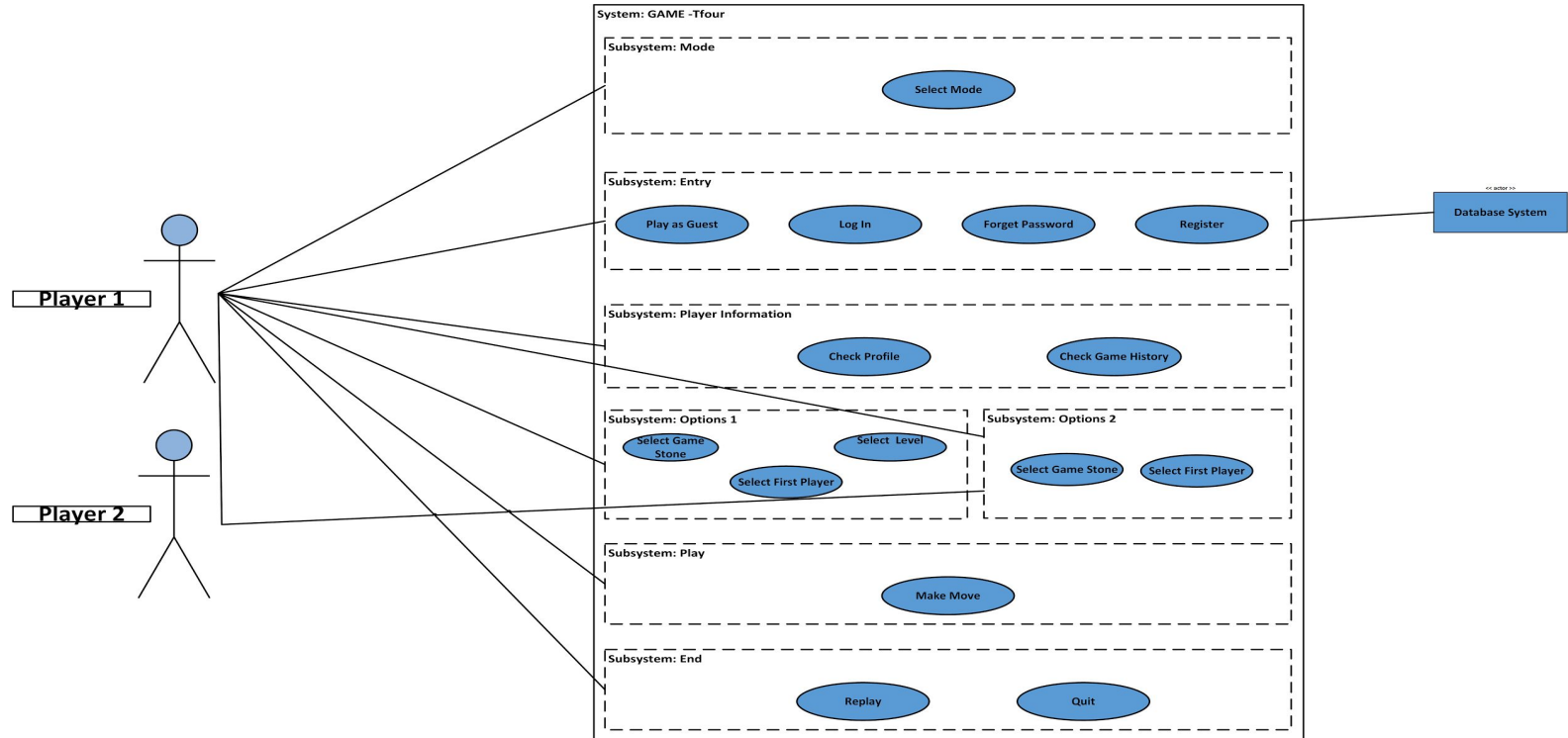
Cost Constraints	None, but we can measure team effort, time spent, progress and quality of project.
Reliability	The game will be delivered free of errors on the given deadline of April, 26, 2016. The software will have a low downtime, calculate the score properly, and will have low maintenance.
Data Persistency	The program should use robust database system to record players and game history.

Non functional Requirements continued

Time Constraints	The finished product will be delivered to the client by April, 26, 2016.
Portability	Only desktop, the user will be able to use the mouse and keyboard for input.
Platform	Our product will only be available for Windows Platform
Extensibility	The system will have areas for extension especially user interface, music etc.

Functional Requirements:

High level view of Use Cases



Functional Requirements

Use case 1: Select Game Mode	User has the option to chose a one player game, or a two player game.
Use case 2: Register	User has the option to create an account, in order to become a registered player.
Use case 3: Login	User has to option to login as a registered player.
Use case 4: Play as guest	User has to option to play the game, without entering their credentials.
Use case 5: Forgot password	User has the option to retrieve their password, by submitting their current email address.

Functional Requirements continued

Use case 6: Check profile	User has the option to view and change their account information.
Use case 7: Check game history	User has the option to view the history of their gameplay stats, during one player gameplay.
Use case 8: Select game stone	User has to option to select their preferred stone type.
Use case 9: Select first player	User has the option to choose the order of player gameplay.
Use case 10: Select computer level of difficulty	User will be able to choose the level of gameplay difficulty.
Use case 11: Make move	User will make a move by clicking a designated space on the gameplay board.

Functional Requirements continued

Use case 12: Replay	User has the option to replay the game against the same opponent, change difficulty level, and decide which player goes first.
Use case 13: Quit	User has the option to quit their game, at the end of gameplay.

Use Cases and User Interfaces

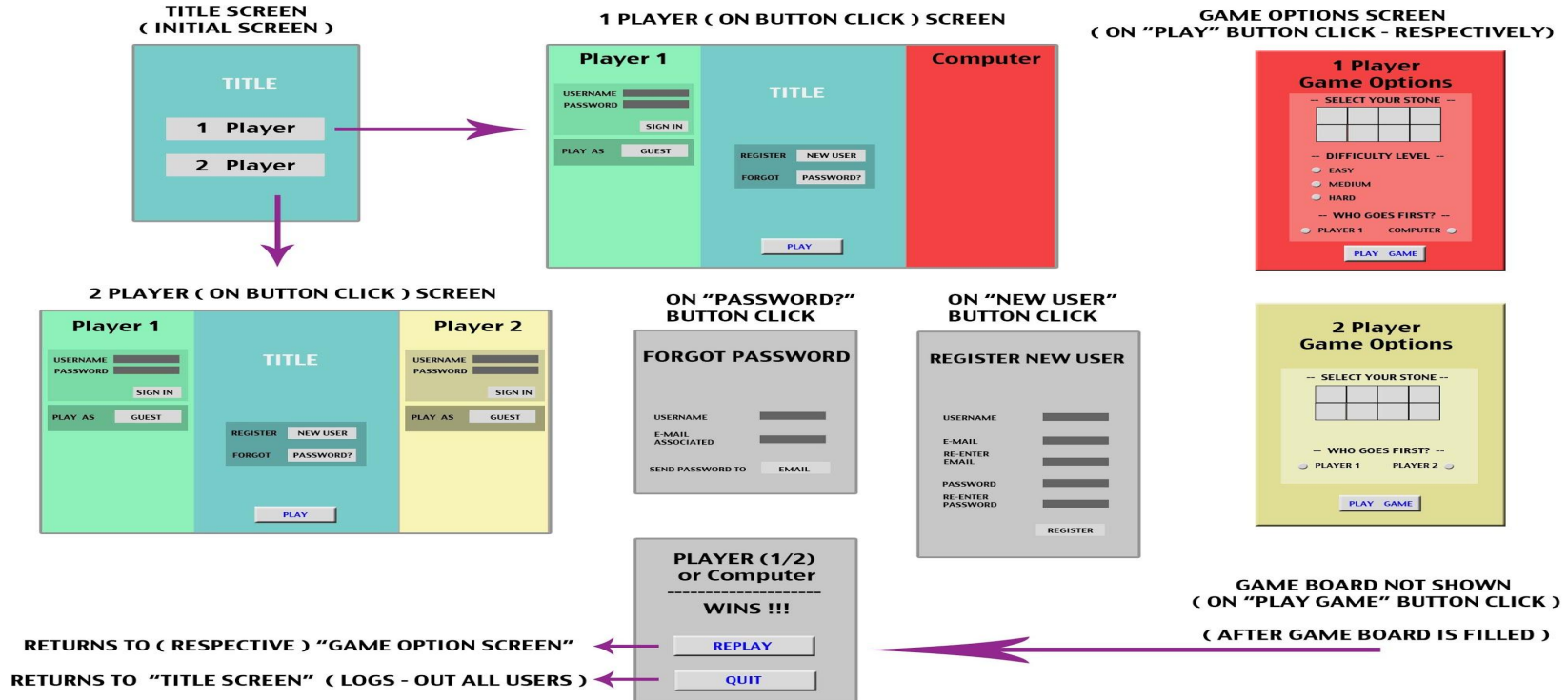
- The functional requirements were based on the questionnaire from the initial interview with our client (Dr. Yuan) on February 3, 2016.

Team Projects: A 6x6x4 tic-tac-toe computer game with an appropriate GUI. On a 6x6 grid, two players (one may be a computer) take turns to place a stone of their colors. The winner is the player who **has higher number of 4-stones-in-a-row** (either horizontally, or vertically, or diagonally) when the entire grid is occupied. When playing with the computer, a user can either play as a guest or with a registered user name. Computer keeps track of the history of each player. Upon user's request, computer can display the history of the players. User may select the level of skill and who goes first. Teams compete at the end of the semester. Winning team receives bonus points for the project.

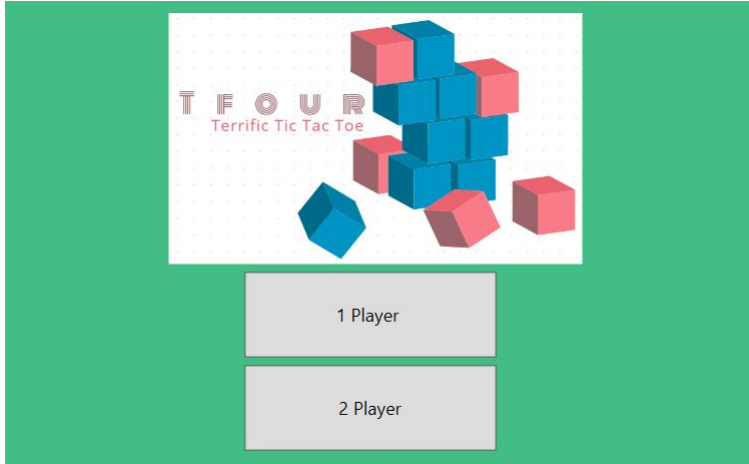
- We began testing by creating a workflow and simple diagram of user interfaces that meet the requirements of the client.

UI Outline

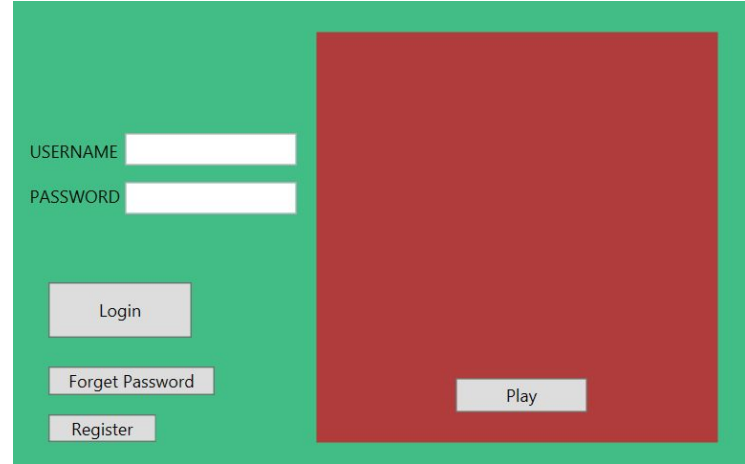
USER INTERFACE - REQUIREMENT ANALYSIS (DRAFT 1 - FEB 10, 2016)



Preliminary UI



Welcome Screen



Login Screen

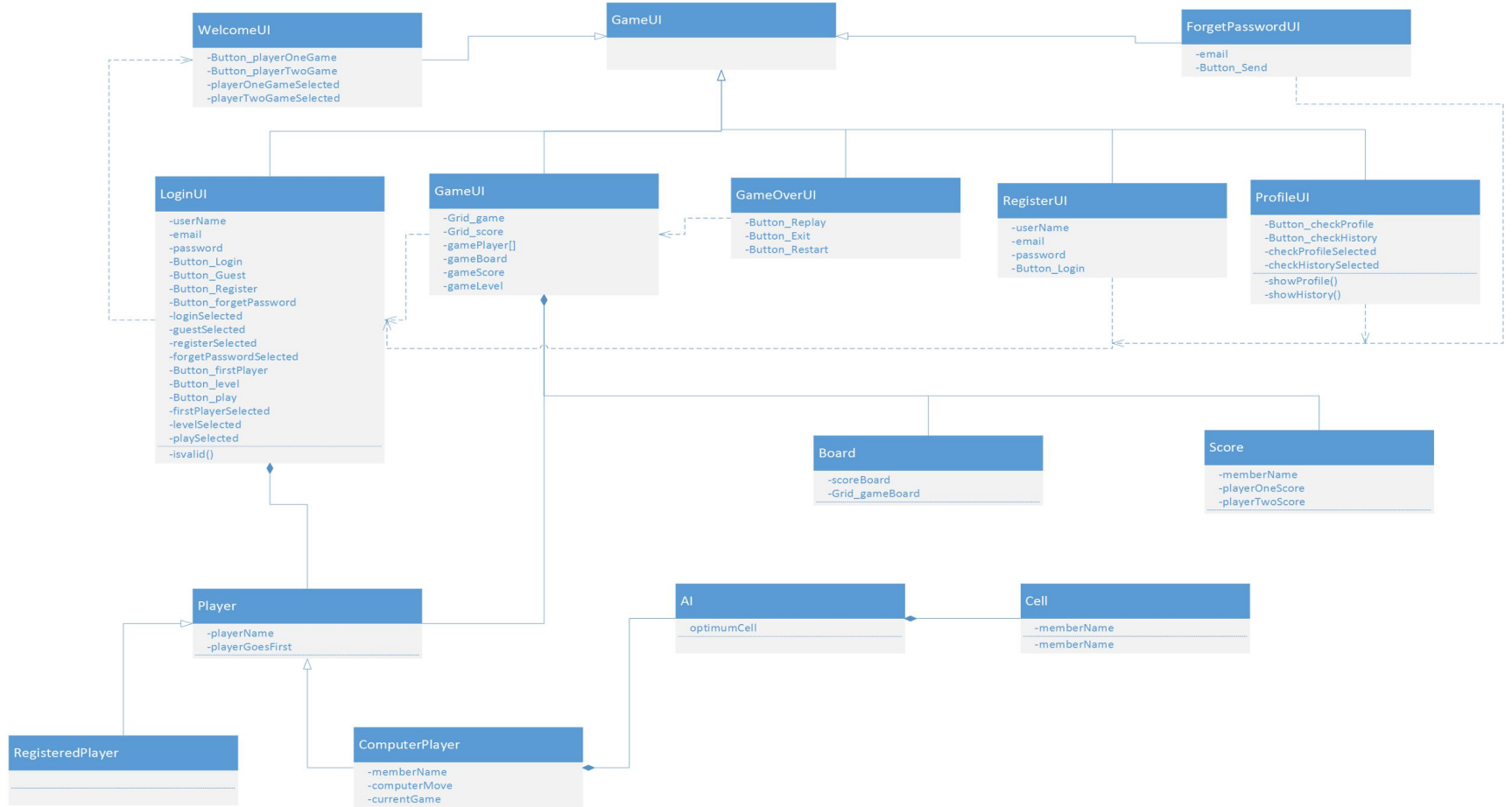
Noun Extraction

The product is a two player **game** where each **player** picks a **stone** color before taking turns placing them on a six by six **board**. The winner is the player who has the higher number of four stones in a row horizontally, vertically, or diagonally once the whole board is filled up. Once the game is over users can have a rematch. The users may exit the application at any given time. In multi player mode the users will play with each other locally on the same machine and decide who goes first. In single player mode the user will play against a **computer**, be able to pick a computer level between easy, medium and hard **mode**, and decide if the computer takes the first turn. Each player may choose to sign into the game using an existing **account** or play as a **guest**, if the players forget their **password** the system will retrieve it for them, the players can also view and update their **profile** information once they have signed in. Data about the matches will be recorded so **registered** players can access their game **history**, which will display the player's opponent, who won, and the final score of each of the player's matches.

Possible Classes:

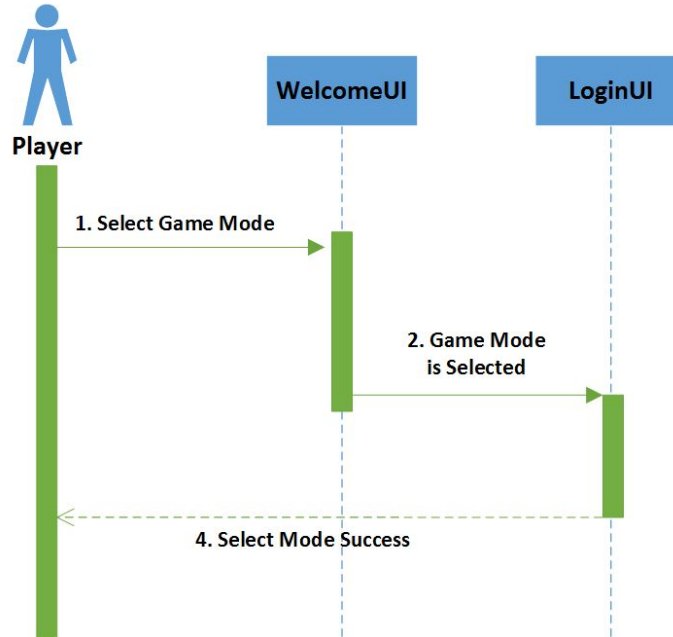
player game stone board computer mode account guest password profile register history winner rematch opponent
score

Preliminary Class Diagram



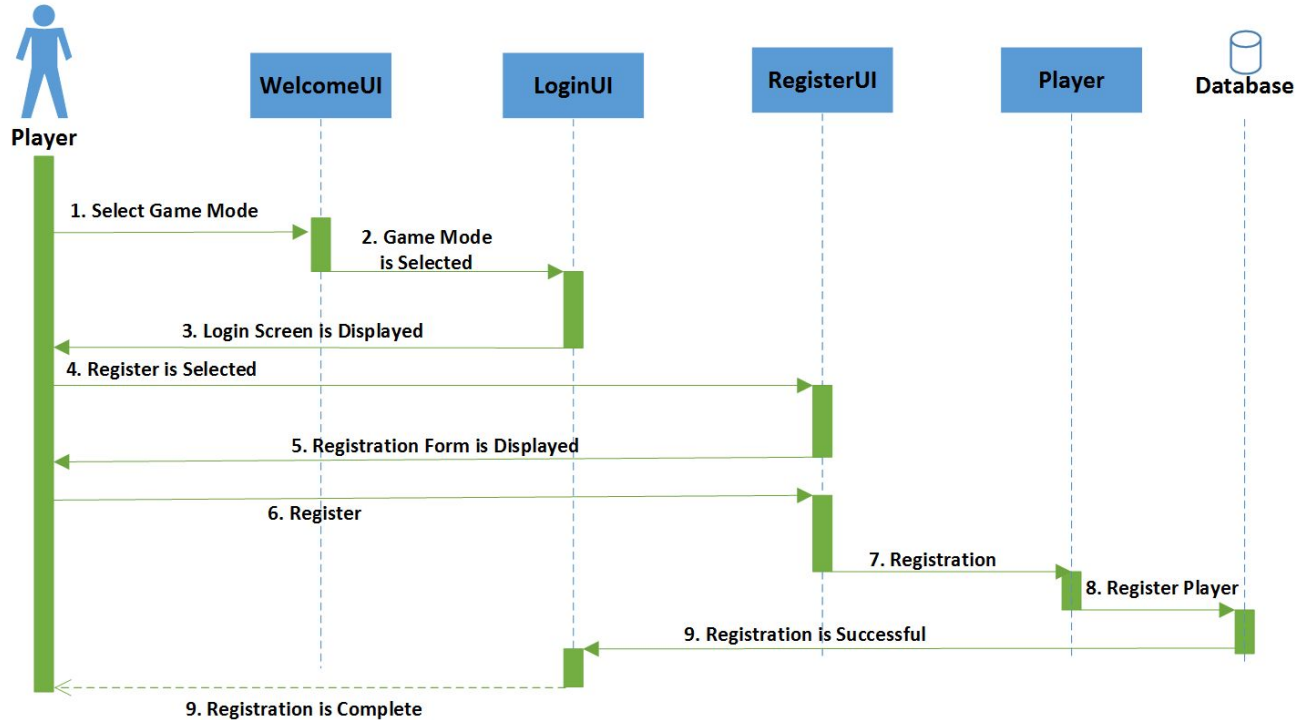
Sequence Diagram

Use Case 1 : Select Mode



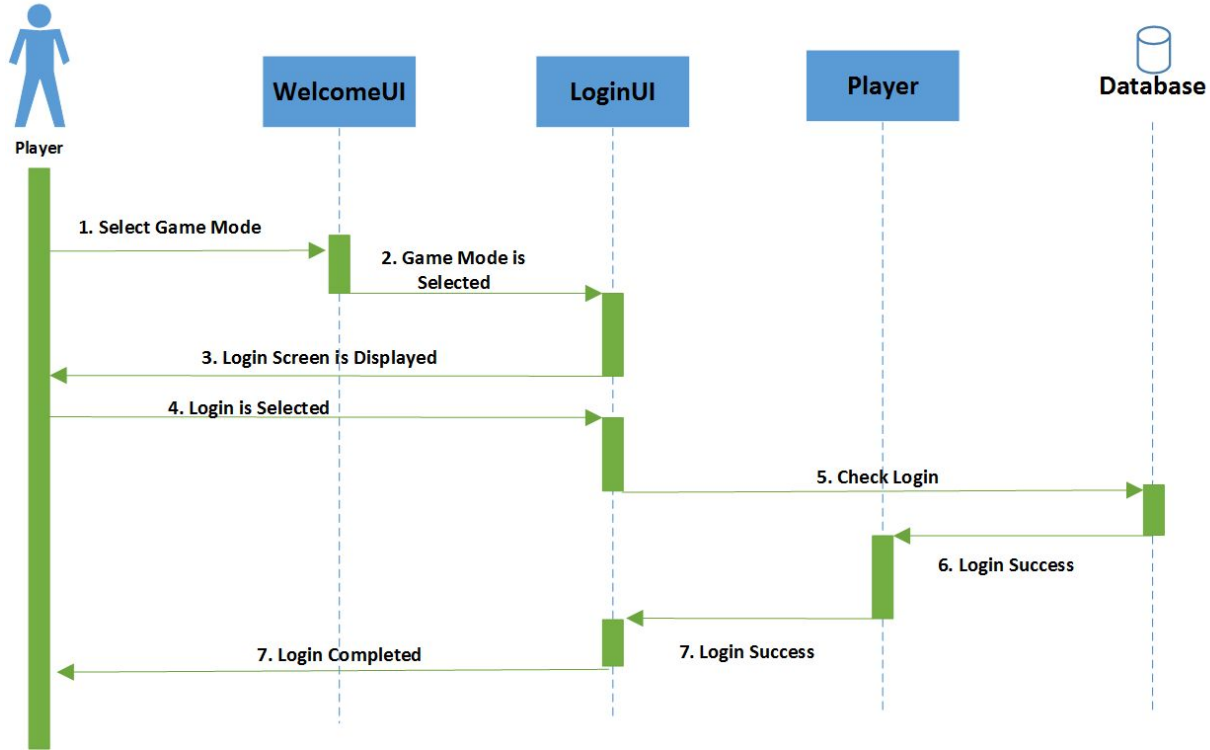
Sequence Diagram

Use Case 2 : Register



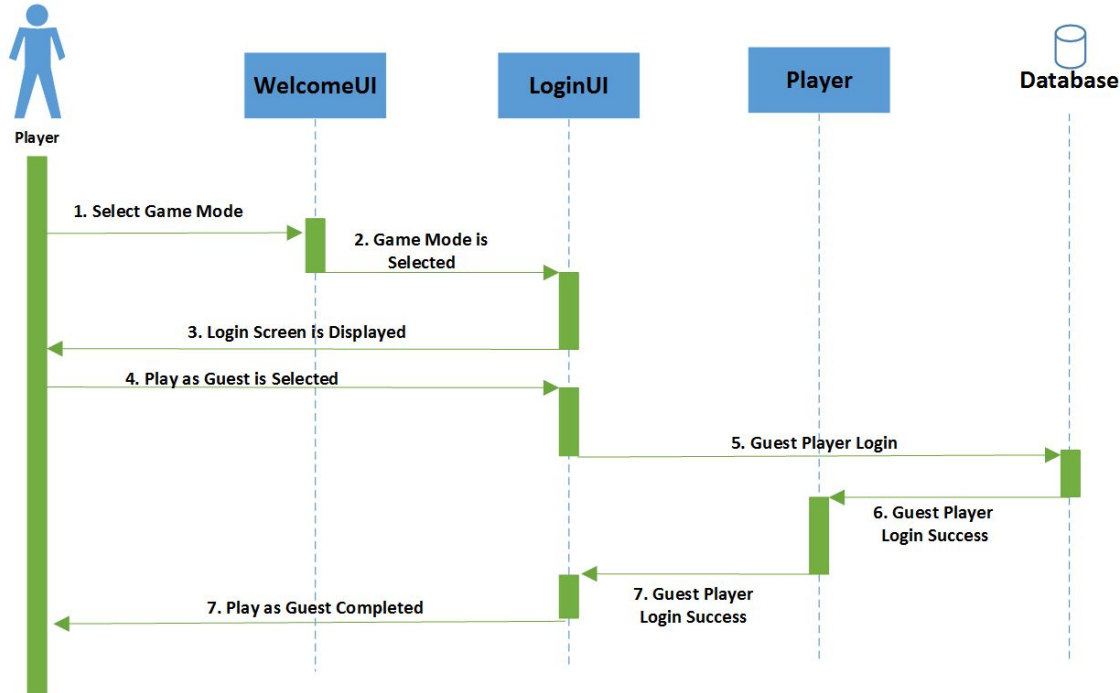
Sequence Diagram

Use Case 3 : Login



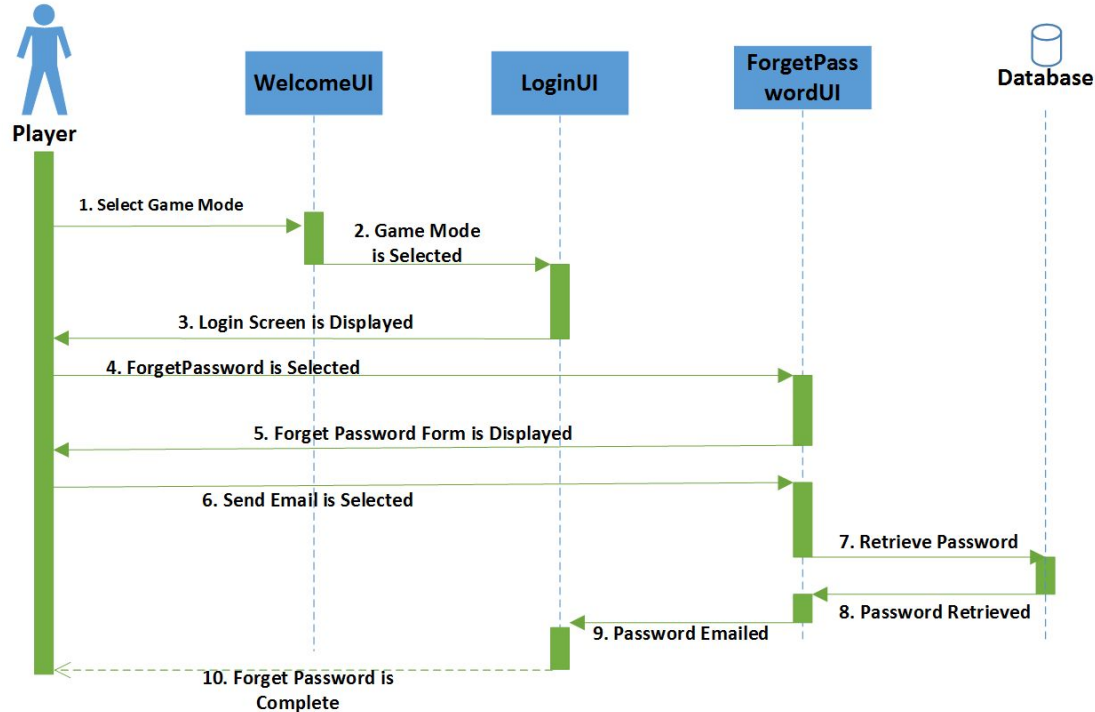
Sequence Diagram

Use Case 4 : Play as Guest



Sequence Diagram

Use Case 5 : Forget Password

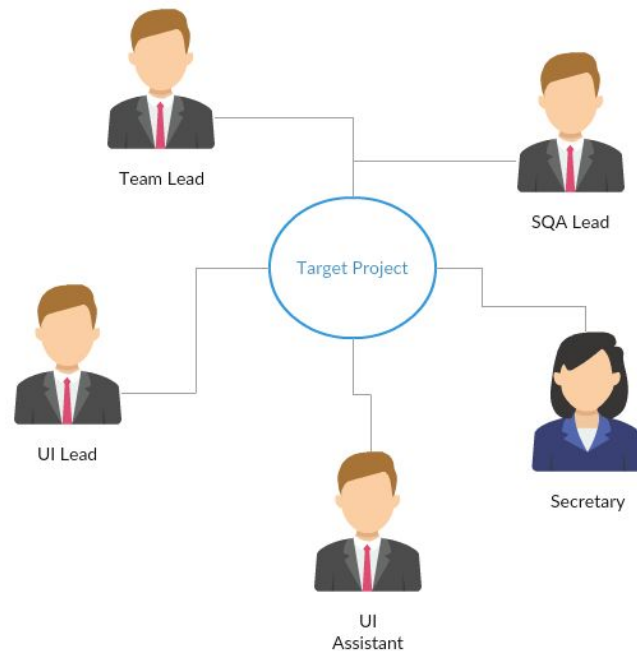


Software Project Management Plan

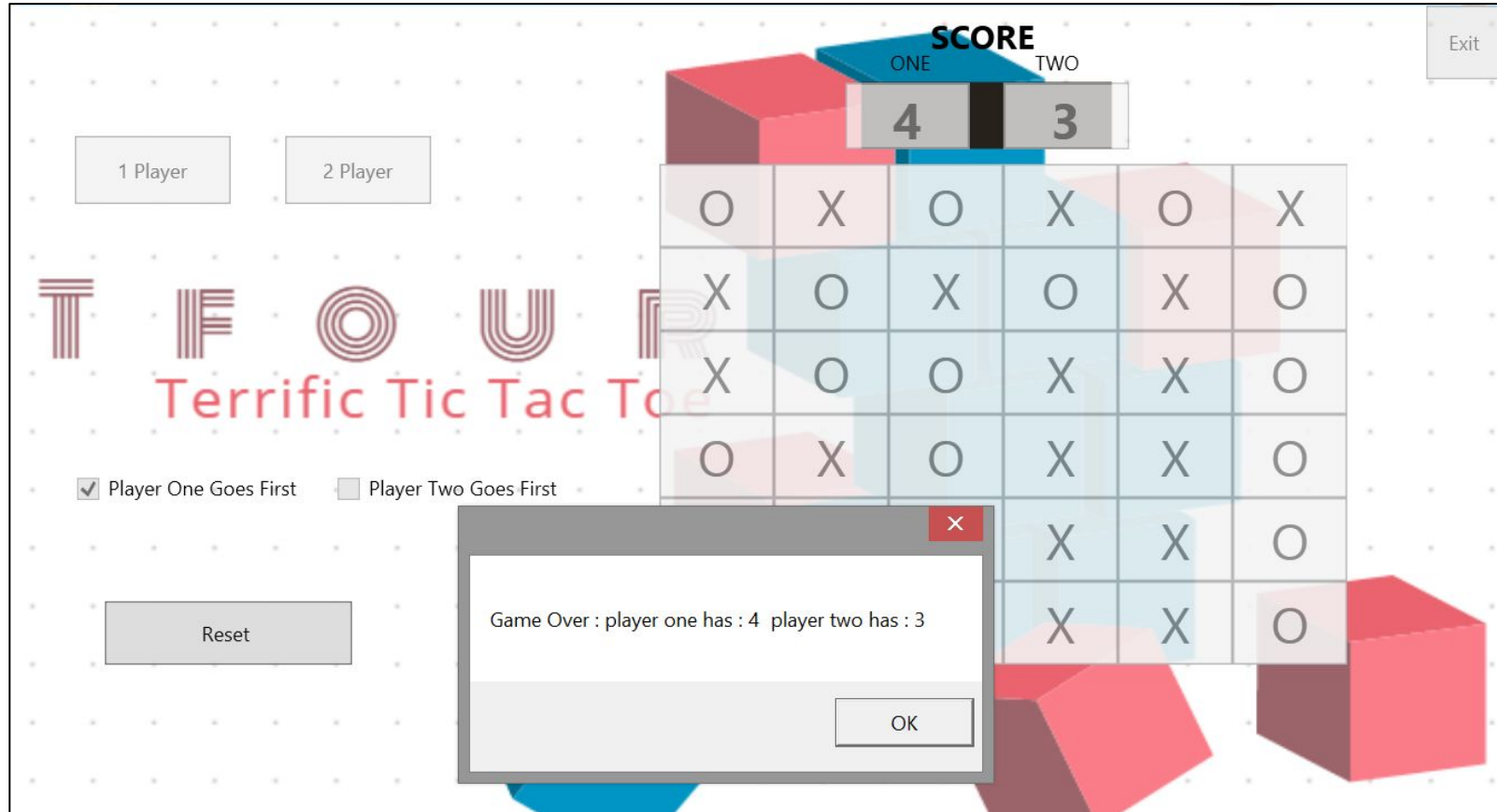
- Delivery of baseline project plan: March, 29, 2016
- Product ready for operation: April, 26, 2016
- Schedule
- Team roles and flexibility
- Risk Management
- Configuration Control

Team Structure

Roles	Responsibilities	Person
Team Lead	Lead the team to the successful completion of the project.	Sishir Subedi
UI Lead	Lead of user interface implementation.	Gabriel Bustamante
UI Designer	Responsible for user interface design.	Dan Tony Le
Software Quality Assurance	Test the software product and make sure all the requirements are met.	Ryan Patterson
Secretary	Lead the preparation of the software product's documentation.	Abigail Parra



Rapid Prototyping



Thank you