Workflow Plan Description

Briefly, our workflow plan has three iterations. The first one mainly focus on building individual components including unity project, unity game objects model and database. Then in the second stage we will start to work together and collaborate the work to implement most of the minimal requirements. As for the last iteration, we plan to finish all the minimal requirements and stretch features.

About Trello Board

We give an index for every single task in workflow plan and trello, so most of tasks in trello board can be found in this workflow plan using the index number. A small number of tasks in trello are not in this documents as they are some very small and detailed tasks that are not as important as others.

Iteration 1: Week 5 (28th August)

1.1.1

**●Title** - Build Game Objects Model

**●Description** - Basic outlook of the objects that player will see in the game, such as Player models, playground, goal gates, background. As well as maybe sound effects.

**●Dependencies -** None

**●Estimated Time** - 10 hours

**●Priority** - minimal

**●Assignee** - Hao Gao

**●Which iteration it’s expected to be done in –** Iteration 1

**●What needs to be done -** The shape and appearance of the player characters, including several different states, such as die, walk or any states. The position and the characteristics of goal gates. As we can some special design to the game play, the goal gate needs to be specialized. Also, stage is designed at this iteration as well.

1.1.2

**●Title** - Create Unity Scripts

**●Description** - At the start of the project, it’s necessary to set up the coding environment for future development in later iteration. In this task, all the essential classes and their interfaces(functions) should be created followed by class diagram. Consequently, it’s easier to divide the task into smaller tasks and assign them in trello.

**●Dependencies -** No dependencies. This task can be done without any pre-requisites.

**●Estimated Time** - 8 hours

**●Priority** - Minimal

**●Assignee** - Chi Peng (Paul)

**●Which iteration it’s expected to be done in –** Iteration 1

**●What needs to be done -** Create an empty unity project; design a simple class diagram; follow the diagram to create classes and interfaces

1.2

**●Title** - Server Building

**●Description** - Enables multiplayer functionalities, including room creation and in-game chat.

**●Dependencies -** None

**●Estimated Time** - As soon as possible.

**●Priority** - Minimal

**●Assignee** - Zequn Ma (Mike)

**●Which iteration it’s expected to be done in –** Iteration 1

**●What needs to be done -** Enable communication between client and server, and able to broadcast game states to all clients. Clients to be able to chat with others in the game.

1.3

**●Title** - Build database

**●Description** - designing and building database model user model and connecting the database to the server

**●Dependencies -** 1.2

**●Estimated Time** - As soon as possible.

**●Priority** - Minimal

**●Assignee** - Sihan Cen(Anson)

**●Which iteration it’s expected to be done in –** Iteration 1

**●What needs to be done -** create user table and relative entities, connect to the server and create function or method to manipulate the database.

1.4

**●Title** - Iteration 1 integration test

**●Description** - At the completion of iteration 1, all the parts should be tested and work well.

This includes that classes and interfaces are created, simple models of the objects are designed, server for the game works fine and database is created.

In addition, the person responsible for modelling the object should ensure that the model displays well in unity, the person in charge of creating classes and interfaces should ensure that the project runs without any bugs and objects can move as required, the person in charge of server should be able to know how to send message to server and get message from server, and person in charge of database should know how to create entries and commit to the database in unity.

**●Dependencies -** 1.1, 1.2, 1.3

**●Estimated Time** - 3 hours or more (depending on what needs to be fixed after testing)

**●Priority** - Minimal

**●Assignee** - Team

**●Which iteration it’s expected to be done in –** Iteration 1

**●What needs to be done -** Test models of objects; run the project; send/receive message from server; commit/get data from database; debug if needed

Iteration 2: Week 8 (18th September)

2.1.1

**●Title** - Refine game object modelling and bubble making

**●Description** - In the second iteration, game models need to be adjusted to fit the current aim of the game play. Also, there may be some changes need to make which might contradict with initial settings.

**●Dependencies -** Based on 1.1.1.

**●Estimated Time** - 10 hours

**●Priority** - minimal

**●Assignee** - Hao Gao

**●Which iteration it’s expected to be done in –** Iteration 2

**●What needs to be done -** As basic shapes of all game models have been settled down, this stage is aiming to make subtle or other changes necessary to the game objects, including their functionalities, outlookings or others.

2.1.2

**●Title** - Implement better camera

**●Description** - Player and camera movement and implementation of their functions are the fundamental requirements in this project. This task should ensure that camera follows the player’s movement correctly and player should be able to move smoothly without any unusual exception and have an auto speed up and direction control as stated in requirement document.

**●Dependencies -** 1.1, 1,2

This task requires the creation of player and camera classes and their interfaces, which should be done in iteration 1. And also the game should have been able to update by receiving other player’s movement from server program.

**●Estimated Time** - 6 hours

**●Priority** - Minimal

**●Assignee** - Chi Peng (Paul)

**●Which iteration it’s expected to be done in –** Iteration 2

**●What needs to be done -** implement all the functions of the interfaces of player and camera classes.

2.1.3

**●Title** - Implement game rules

**●Description** - As one of the key objects in bubble soccer game, the playground including gate and ball movement should be handled well. As written in requirements, gate should be responsible for recording points/goals, so as the playground. Ball movement should reflect by player’s kick and boundaries of the playground. Playground should also be able to do a circular movement while the game is on and reset the position of the player who are out of bound.

**●Dependencies -** 2.1.2

This task has the prerequisite of completion of basic functionalities of player and camera classes as the ball can only move by being kicked by players.

**●Estimated Time** - 8 hours

**●Priority** - Minimal

**●Assignee** - Chi Peng (Paul)

**●Which iteration it’s expected to be done in –** Iteration 2

**●What needs to be done -** Complete playground circular movement; complete ball movement; complete winning points rule in playground class

2.1.4

**●Title** - In-game UI

**●Description** - Score board, goal animation, freeze timer before game starts and movement, action buttons

**●Dependencies -** Iteration 1

**●Estimated Time** - 5 hours

**●Priority** - Minimal

**●Assignee** - Chi Peng (Paul)

**●Which iteration it’s expected to be done in –** Iteration 2

**●What needs to be done -** create UI buttons, images and text in game scene

2.1.5

**●Title** - Implement game replay functionality

**●Description** - User can watch the replays of the games he played though the third person perspective.

**●Dependencies -** Iteration 1

**●Estimated Time** - 5 hours

**●Priority** - Minimal

**●Assignee** - Sihan Cen(Anson) Mike

**●Which iteration it’s expected to be done in –** Iteration 2

**●What needs to be done -** game replay GUI design, replay storage implementation and user watching function implementation

2.2

**●Title** - Update game server

**●Description** - update game server implementation to be suitable for new features implemented in iteration 2.

**●Dependencies -** Server built

**●Estimated Time** - Two days

**●Priority** - Minimal

**●Assignee** - Mike

**●Which iteration it’s expected to be done in –** Iteration 2

**●What needs to be done -** Realize any features implemented in iteration 2 on server side.

2.3

**●Title** - Iteration 2 integration test

**●Description** - At this stage, all the individual tasks completed in iteration 1 and most of the minimal features should have been collaborated. The expected outcome of this task is that player can login, play game with other players (and chat in game) and watch game replay using GUIs.

**●Dependencies** - all the other tasks in iteration 2 should be completed before this task.

**●Estimated Time** - 3 hours or more (depending on what needs to be fixed after testing)

**●Priority** - Minimal

**●Assignee** - Team

**●Which iteration it’s expected to be done in –** Iteration 2

**●What needs to be done** - run the project; test login functionality; test gameplay functionality; test in-game chat functionality; test GUIs; test game replay functionality; debug if needed

Iteration 3: Week 11 (16th October)

3.1.1

**●Title** - Improve game objects model

**●Description** - In the last iteration, different animations are created according to detailed requirements. Also, models in different state need to be connected by a series of animations or effects.

**●Dependencies -** Based on 2.1.1 and signature skills

**●Estimated Time** - 10 hours

**●Priority** - minimal

**●Assignee** - Hao Gao

**●Which iteration it’s expected to be done in –** Iteration 3

**●What needs to be done -** List of different actions that player characters would have is created. Animations of ball’s movement is created and as well as the actions that goal gate might have is also created. By writing necessary scripts those animations will be connected smoothly.

3.1.2

**●Title** - Implement “playing with friends” and friends functionality

**●Description** - extend the game social network functionality. User can add friend, delete friend and send the ingame mail to their friend. User are able to play the match with their friend.

**●Dependencies -** game friend database model

**●Estimated Time** - 5 hours

**●Priority** - Minimal

**●Assignee** - Sihan Cen(Anson) Mike

**●Which iteration it’s expected to be done in –** Iteration 2

**●What needs to be done -** enable the friend search functionality. Connect the user database to the facebook API. allow user invite their facebook friend to the game. Show both online and offline friend. Add friend add/remove functionality. Add in game mail system and enable the user send message to each other within the menu. Design the GUI.

3.1.3

**●Title** - Implement special moves

**●Description** - As one of the most desirable features in a game, signature skill is key to improve the playfulness of the game. Although this task is not of high priority, it should be completed as soon as possible in iteration 3. Specifically, the signature skill mechanism should enable players to make a good play and have a cooldown time before next use. Player objects should reflect naturally and smoothly to a signature skill strike.

**●Dependencies -** The completion of functions in iteration 2 in player class and ball class is required before starting this task. Also, this task requires the animation of the signature skill

**●Estimated Time** - 8 hours

**●Priority** - stretch

**●Assignee** - Chi Peng (Paul)

**●Which iteration it’s expected to be done in –** Iteration 3

**●What needs to be done -** implement signature skill function in player class; implement the feedback of all the objects hit by the signature skill.

3.2.1

**●Title** - Camera setup

**●Description** - set up camera for each player in multiplayer mode

**●Dependencies** - 2.2 game server

**●Estimated Time** - 3 hours or more (depending on what needs to be fixed after testing)

**●Priority** - Minimal

**●Assignee** - Haoqian Gao (Tony)

**●Which iteration it’s expected to be done in –** Iteration 3

**●What needs to be done** - create scripts, and assign it to player prefab when joining the room

3.2.2

**●Title** - Character collision

**●Description** - handling and improving physical collision between players in multiplayer mode

**●Dependencies** - 2.2 game server

**●Estimated Time** - 4 hours

**●Priority** - Minimal

**●Assignee** - Chi Peng (Paul)

**●Which iteration it’s expected to be done in –** Iteration 3

**●What needs to be done** - write functions that handles collision and synchronise components of players on server.

3.2.3

**●Title** - Game Audio

**●Description** - play background music in menu page and in game

**●Dependencies** - 2.1.4 in game UI

**●Estimated Time** - 2

**●Priority** - Stretch

**●Assignee** - Haoqian Gao (Tony)

**●Which iteration it’s expected to be done in –** Iteration 3

**●What needs to be done** - add audio files to asset and assign and play them in different scenes.

3.2.4

**●Title** - UI design and implementation

**●Description** - create user basic in game functionality includes login, user menu and in game chat interface. After completion of this part, user can access the game menu and login to game to use the basic user functionality.

**●Dependencies** - 1.3 build database

**●Estimated Time** - 4 hours

**●Priority** - Minimal

**●Assignee** - Sihan Cen (Anson)

**●Which iteration it’s expected to be done in –** Iteration 3

**●What needs to be done** - create front end UI and back end functions to connect to database to authenticate and login, then update UI

3.2.5

**●Title** - In-game chat function

**●Description** - create an UI view in game and allow players to chat over the network

**●Dependencies** - 1.2 Server building

**●Estimated Time** - 4 hours

**●Priority** - Minimal

**●Assignee** - Haoqian Gao (Tony)

**●Which iteration it’s expected to be done in –** Iteration 3

**●What needs to be done** - create UI in game scene and write functions to allow messages to be synchronised over network.

3.3

**●Title** - Test/Debug all the tasks in iteration 3

**●Description** - At this stage, all the individual tasks completed in iteration 2 and most of the stretch features should have been collaborated. There should be animation of game objects, signature skill of player, GUI for adding friends, room for inviting friends in game.

**●Dependencies** - all the other tasks in iteration 2 should be completed before this task.

**●Estimated Time** - 3 hours or more (depending on what needs to be fixed after testing)

**●Priority** - Minimal

**●Assignee** - Team

**●Which iteration it’s expected to be done in –** Iteration 2

**●What needs to be done** - run project; test animation in game; test signature skills; test friend management; test playing room functionality; debug if needed