### Simple Social Card Collection Battling Game

Design Document

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### Introduction

This document presents the particular design choices being made for the software: Simple Card Collection and Battling Game.

### Design Considerations

##### 2.1 Assumptions

This design assumes that user has a standard mouse and keyboard in a PC platform, with an operating system compatible with running Java programs.

A relatively stable internet connection is also assumed.

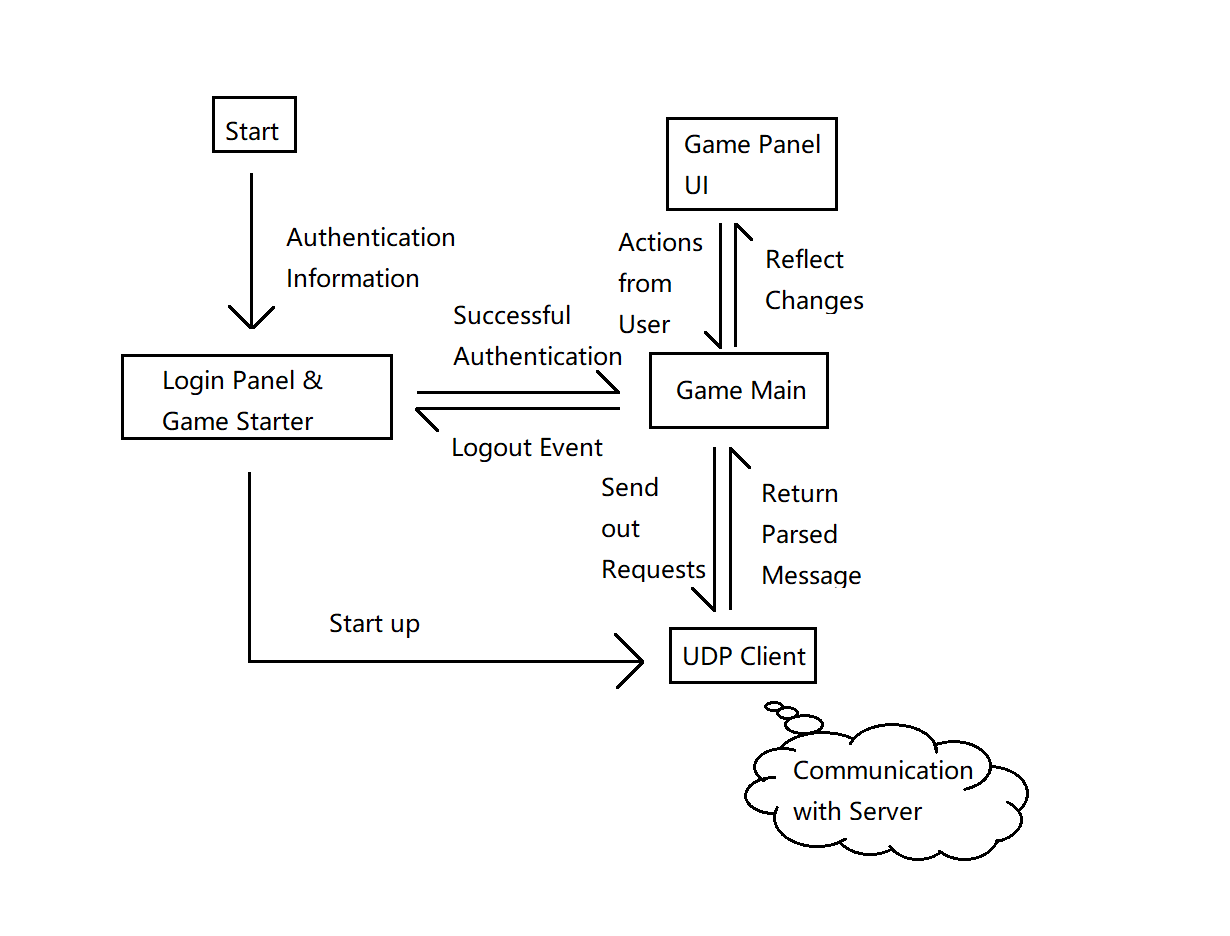
##### 2.2 Design Principles

The Design is kept simple, with minimal safety and privacy features. The GUI is kept as straightforward as possible and mostly limiting interactive items to buttons.

##### 2.3 Development Methods

We used Build & Fix, to keep it simple.

### Architectural Representation



### System Architecture

The system is build using object-oriented design. A central object, Game, manages nearly all possible attributes of this software, and GUI objects call on method of the Game object to update itself. The center object has access to all GUI objects to update the display.

The Game object operates the communication with server, which packs messages according to a defined protocol, and unpacks messages from the server and updates itself accordingly.

### Policies and Tactics

This software uses the standard Java Runtime Environment 1.8 and the Eclipse SWT GUI toolkit.

To make GUI not as ugly and code not as messy, SWT library is a better option than Javax -Swing.

Java provides straightforward object-oriented programming support.

### Detailed System Design

#### 6.1 Login:

|  |
| --- |
| Label\_Username |
| Textfield\_Username |
| Label\_Password |
| Textfield\_Password |
| Button\_Submit |

Submit button calls a method in Game, packs the two fields into a packet and sendstheir values to the to server, and be expecting a result indicating the authentication status.

With successful login, direct user to Panel.

With unsuccessful login, clears two textfields and asks the user to try again.

#### 6.2 Panel:

|  |
| --- |
| Label\_MyNickname |
| Button\_ViewMyCards |
| Button\_ViewMyFriends |
| Button\_QuickMatch |
| Button\_Logout |

Logout redirects the user back to login (quitting is implement in closing window)

The other 3 buttons redirect the user to their screens, while a request for information update is sent to the server.

#### 6.3 View My Cards – embedded in Panel:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Label\_CardStatus1 | Label\_CardStatus2 | … | … | … | Button\_AddSelected |
| Card 1 | Card 2 | … | … | … |  |
| Label\_CardStatusM | Label\_CardStatusN | … | … | … | Button\_RemoveSelected |
| Card M | Card N | … | … | … |  |
| Label\_DeckStatus | Label\_SelectedCard |  |  |  | Button\_Back |

Card Status label indicates how many cards of this kind are already in the deck.

Card M displays the card image and its description.

The User can select cards by clicking on to them, and add and remove operations are limited to the card selected. (Legal operations check)

Back brings user back to Panel.

#### 6.4 View My Friends – embedded in Panel:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Label\_FriendStatus1 | Label\_FriendStatus2 | … | … | … | Button\_StartChat |
| Friend 1 | Friend 2 | … | … | … | Button\_RequestBattle |
| Label\_FriendStatusM | Label\_FriendStatusN | … | … | … | Label\_SelectedFriend |
| Friend M | Friend N | … | … | … | Button\_Back |

Friend Status Label indicates whether they are online, and whether there are messages or battle requests pending.

Friend M displays their friend’s nickname.

Select a friend by clicking onto the nickname, and the Start Chat and Request Battle functions are limited to the selected friend.

Back brings user to Panel.

#### 6.5 Quick Match Waiting – embedded in Panel:

|  |
| --- |
| Label\_TimeWaited |
| Button\_CancelQueueing |

Each second, the queueing status is updated, also updating the time waited.

A successful matchmaking brings users directly to a match.

Cancel Queueing brings user back to Panel.

#### 6.6 In Match:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Enemy\_Slot1 | Enemy\_Slot2 | Enemy\_Slot3 | Enemy\_Slot4 | TextArea\_BattleLog |
| Enemy\_Slot5 | Enemy\_Slot6 | Enemy\_Slot7 | Enemy\_Slot8 | Button\_StartChat |
| My\_Slot1 | My\_Slot2 | My\_Slot3 | My\_Slot4 | Button\_EndTurn |
| My\_Slot5 | My\_Slot6 | My\_Slot7 | My\_Slot8 | Button\_Surrender |
| My\_Hand1 | My\_Hand2 | My\_Hand3 | My\_Hand4 | My\_Hand5 |

Match is separate from Panel, but there is a field to prevent the user from going to matchmaking or request battle to a friend when a match is active.

Cards are active on the field, and users can perform interactions with them as long as they are legal.

End turn tells the server it is the opponent’s turn to move.

Surrendering ends the game.

Closing the window also results in surrendering.

#### 6.7 Chat Window:

|  |
| --- |
| TextArea\_MessageLog |
| TextField\_InputMessage |
| Button\_Send |
| Button\_RequestBattle |

The Chat window is also separated from the panel, and multiple windows can be active at the same time.

All messages are stored in Game, the Message Log is updated when Game receives a message or the user sends something out.

The User enter message into the input textfield.

Send clears the input field, and sends the message to Game, where Game contacts with server.

Battle Requests can also be sent here.

### Glossary

This design document is made by Lee Kelvin lxk201 and Qianxiang Ma qxm28.