Serious Gaming
Design Document

Design patterns and diagrams used for the creation of the final year project and the process that are carried out by the application

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Introduction

The following document is a complete work of all design patterns and diagrams for the explanation of the serious game projects process that are carried out by the application with user's input.

This document also contains the relationships between classes, system sequences and other component of the project as well as how processes may be carried out by the system itself
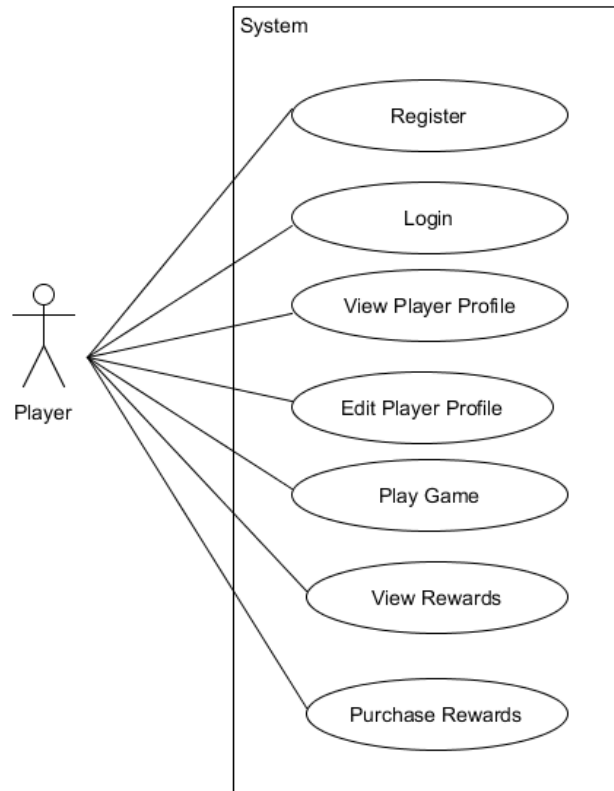
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Use Case

Use case Diagram

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Brief Use Case

Registration
Actor: Gamer
Description:

> The gamer can register with the application if they do not already have an existing account by providing their full name, e-mail address and a password.

Login
Actor: Gamer
Description:

> The gamer if already registered with the application if they can login using their e-mail address and password provided when they were registering with the application.

View Player profile
Actor: Gamer
Description:

> Once the gamer has logged in/registered with the application they will be able to view their player profile with the application this will show their name, username, points accumulated leader board position other things.

Edit Player profile
Actor: Gamer
Description:

> Once the gamer has logged in/registered with the application they will be able to edit certain values of their player profile with the application these include name, e-mail address and a password.

Play game
Actor: Gamer
Description:

> The gamer will be able to play the available games in one of two modes the first being selection of individual game while the other will be a random selection of the games available.

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View rewards

Actor: Gamer

Description:

> The gamer will be able to view a list of rewards available for purchase that they can buy with the points they have accumulate.

Purchase rewards

Actor: Gamer

Description:

> The gamer will be able to purchase an available reward from a list of rewards once they have the required amount of points to purchase the desired reward, this in turn reduces the amount of points the payer has obtained so far which could cause the player to lowering their rank in the leader board .

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Detailed Used case

Register

Actor: Gamer

Main Success Scenario:

1. A gamer can register with the application if they do not already have an existing account by clicking on the "register" button
2. A form will display asking the gamer to provide the following information
    b. Full name
    c. E-mail address
    d. Password
    e. Username
3. Once all the information has been supplied the game can click the "confirm" button to register
4. The user will then be given access to the application

Alternatives:

1. The game clicks the "login" button instead and begins the process of logging into the application.
2. A form will display asking the gamer to provide the following information
    b. The e-mail address is already associated with an existing account

Login

Actor: Gamer

Main Success Scenario:

1. A gamer can login to with the application as long as there is no account already logged in with the application, to login the gamer clicks the "login" button
2. The login screen displays showing two text boxes one for the user e-mail address one for the gamers password
3. Once the gamer has entered both their e-mail and password they can login by clicking the "submit" button
4. The lobby screen displays showing the gamers

Alternatives:

1. The gamer clicks the "register" button instead and begins the process to register with the application.
2. Te lobby screen reloads showing an error message stating one or both of the following:
    a. The e-mail address was is not associated with the application
    b. The enter password was invalid

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View Player profile

Actor: Gamer

Main Success Scenario:

1. Once the gamer has logged into the application from the lobby the gamer can click the "Profile" button
2. The player profile screen displays allowing the user view their player details
3. The gamer can exits the player profile by clicking the "lobby" button
4. The gamer is returned to the lobby page

Alternatives:

2. Another screen is displayed due to another button being clicked
3. The edit details screen will display if the gamer clicks the "edit" button by accident
4. The edit profile details screen displays

Edit Player profile

Actor: Gamer

Main Success Scenario:

1. Once the gamer has logged into the application from the lobby the gamer can click the "Profile" button
2. The player profile screen displays showing the users player details
3. The gamer can then click the "edit" button
4. The edit profile screen displays showing the users player details along with text boxes for then details to be entered
5. The gamer clicks the "confirm" button, the new detail are saved and the player profile is updated
6. The player profile screen displays showing the user view the new/updated details entered
7. The gamer can exits the player profile by clicking the "lobby" button or the back button on the smart device
8. The gamer is returned to the lobby page

Alternatives:

2. Another screen is displayed due to another button being clicked
4. The "lobby" button is click or the back button on the smart device returning the gamer to the lobby screen
5. The "cancel" button is click or the back button on the smart device returning the gamer to the player profile screen

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Play game

Actor: Gamer

Main Success Scenario:

1. From the lobby the gamer clicks the "play" button
2. This loads a random image and asks the gamer to input the details of what they see
3. The gamer can enter the values of the image displayed by using the number picks some of which have been modified to better fit the image displayed
4. Once the gamer has arranged the pickers to the value they best thing the image might be, the game then clicks the "submit" button
5. The gamer input is then submitted, the gamer receives points based on the value displayed on the game screen and a new image is then loaded.

Alternatives:

2. Another screen is displayed due to another button being clicked
4.
   a. The gamer can state if the image is junk referring to the image being unreadable for them, no points are rewarded, it is noted that the image was submitted ass junk and a new image is loaded
   b. The gamers can click the "lobby" button and is returned to the lobby screen

View rewards

Actor: Gamer
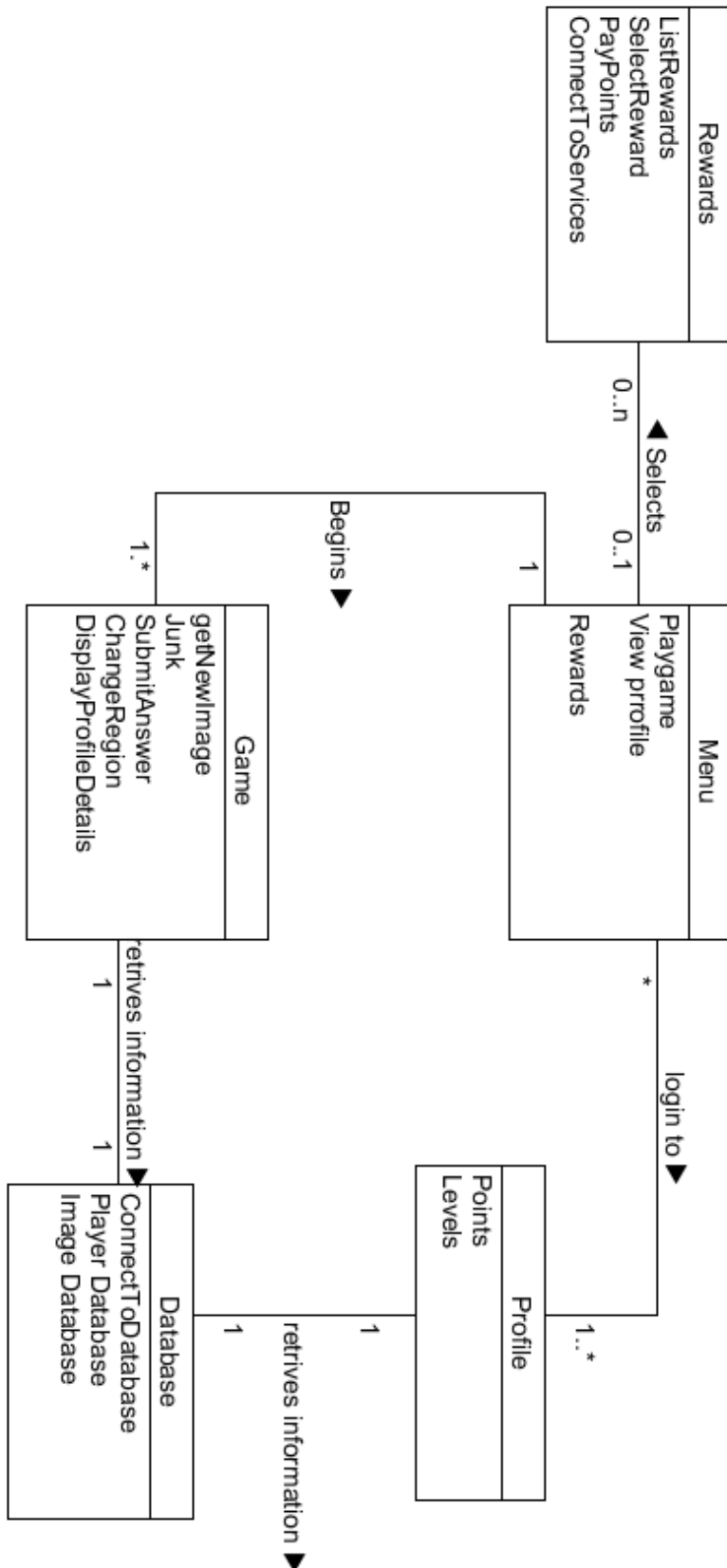
Main Success Scenario:

1. Once the gamer has logged into the application from the lobby the gamer can click the "Rewards" button
2. A list of available rewards are presented, each containing the rewards name and points need to purchase the reward
3. The gamer can begin the process of retrieving a reward or exit the rewards screen returning to the lobby screen.
4. The gamer can clicks the "Return to lobby" button
5. The gamer is returned to the lobby page

Alternatives:

6. The "lobby" button is click or the back button on the smart device returning the gamer to the lobby screen
7. The "cancel" button is click or the back button on the smart device returning the gamer to the player profile screen

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Purchase rewards

Actor: Gamer

Main Success Scenario:

1. Once the gamer has logged into the application from the lobby the gamer can click the "Rewards" button
2. A list of available rewards are presented, each containing the rewards name and points for purchase
3. The gamer can begin the process of retrieving a reward.
4. The gamer can clicks the reward they wish to purchase the information is then displayed below showing the selected reward.
5. Once a reward has been selected the gamer clicks the "Purchase" button
6. The points value of the reward is subtracted from the gamers score
7. The gamer remains on the rewards screen until they click the "Return to lobby" button

Alternatives:

5. The "lobby" button is click or the back button on the smart device returning the gamer to the lobby screen
6. The points value of the reward are two high compared to the players current score and therefore is unable to purchase the reward.

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Domain mode

Rewards
- ListRewards
- SelectReward
- PayPoints
- ConnectToServices

0..n ▲ Selects 0..1

Begins ▼

1

Menu
- Playgame
- View prrofile
- Rewards

1..*

Game
- getNewImage
- Junk
- SubmitAnswer
- ChangeRegion
- DisplayProfileDetails

1..*

retrives information

1

1

* login to ▼

Profile
- Points
- Levels

1

retrives information ▼

1

1

Database
- ConnectToDatabase
- Player Database
- Image Database

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Figure 2

System Sequence Diagram

Register
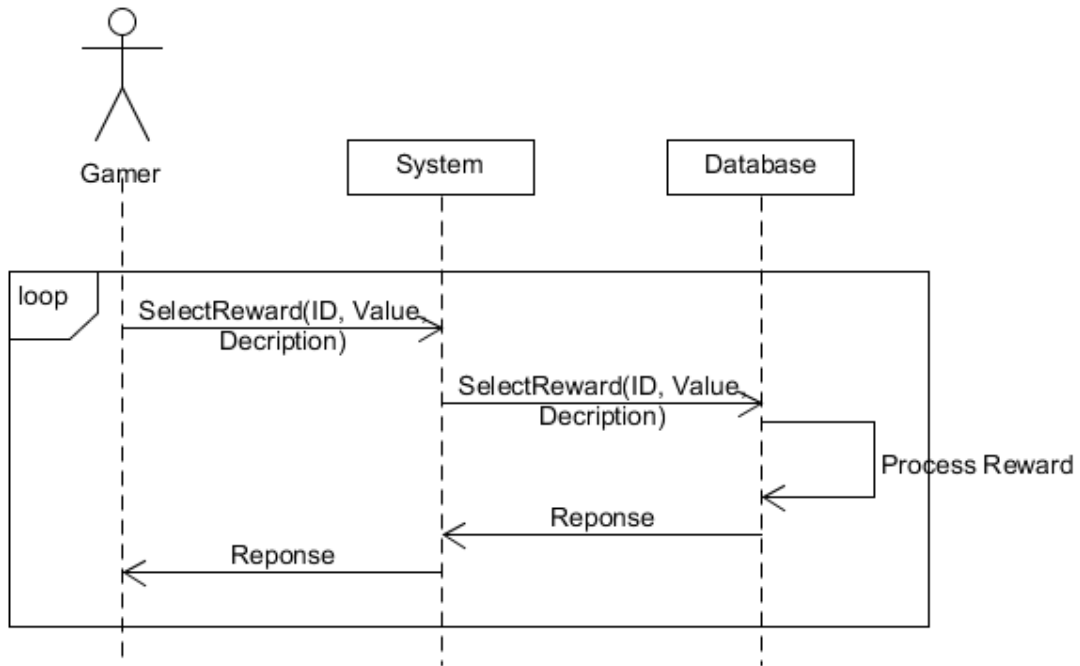
Figure 3

Login
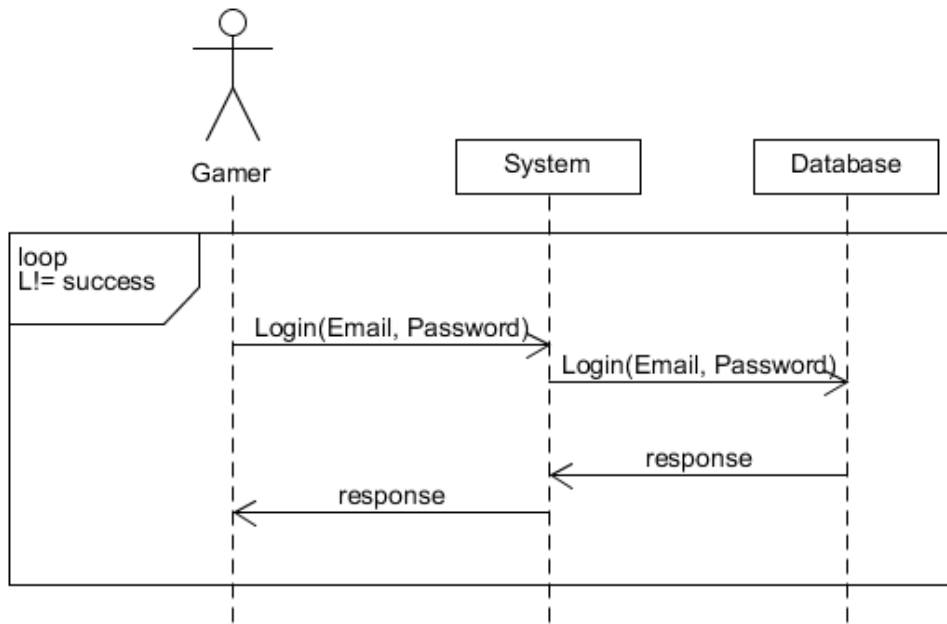
Playing game
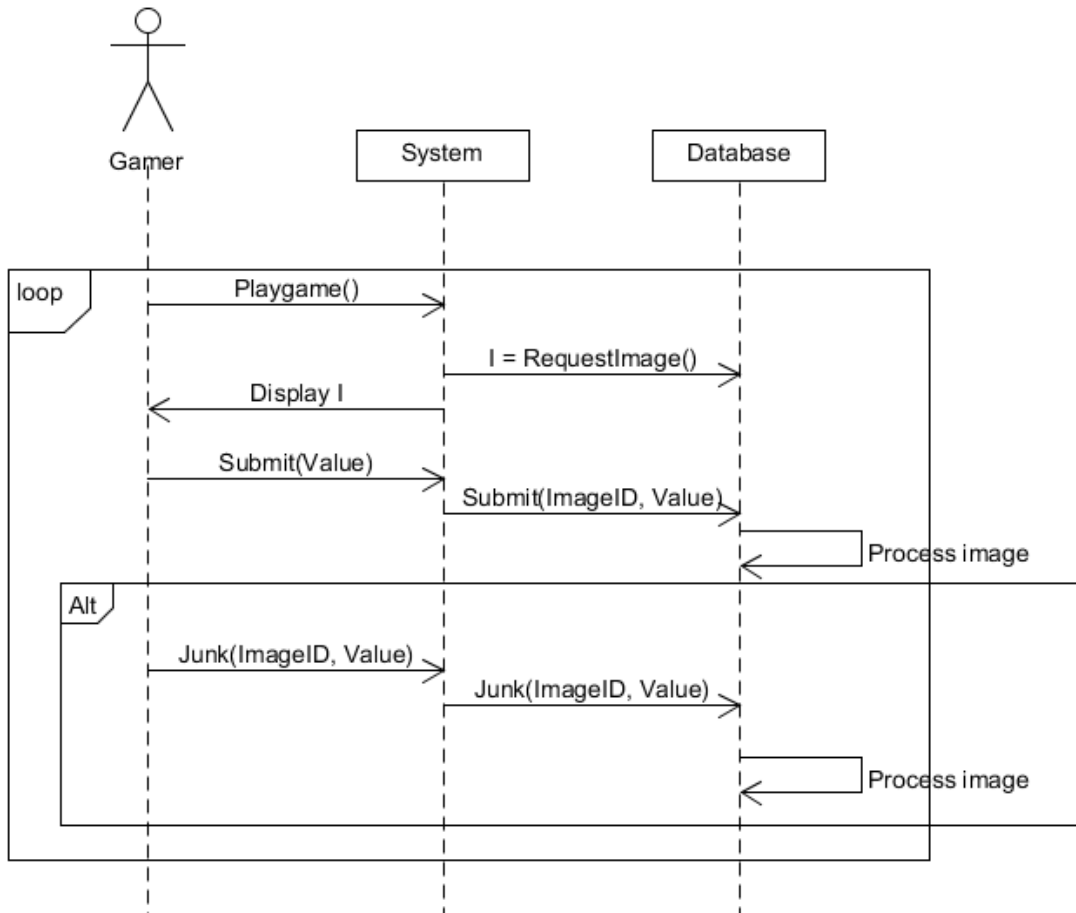
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Figure 5

Rewards
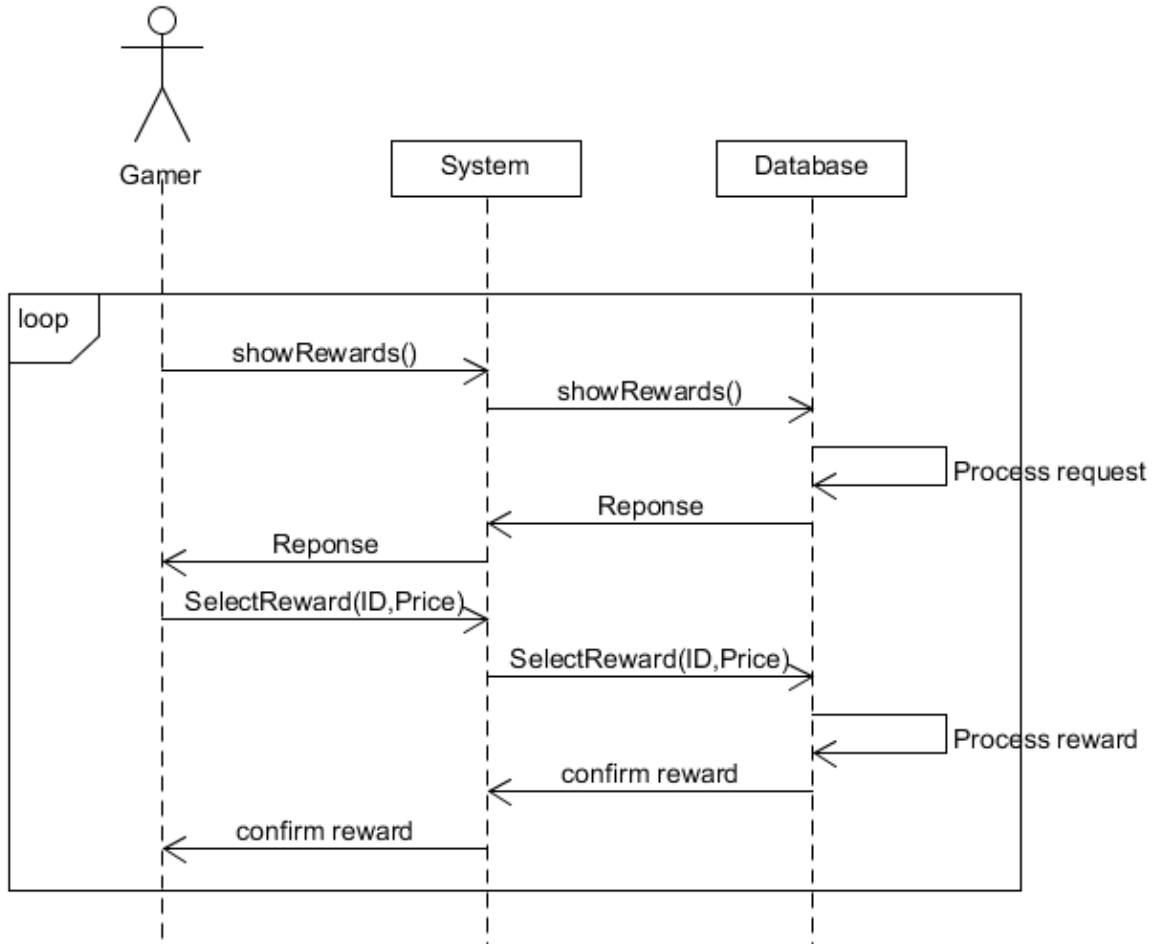
Figure 6

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GUI Designs

Main screen

The main screen is where users begin the application, the user is asked to register with the system or login. The user has only two options click the first login button to log in with the system or click the second button to register with the system.
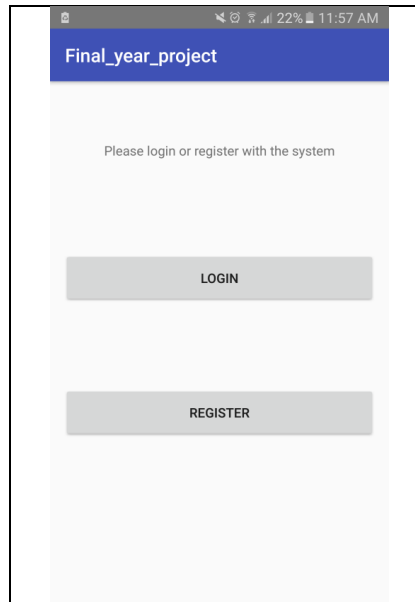
Register

The registration form is used to add a person to the system so that they be able to login and play the game, the user must enter their name, e-mail address, password and confirmation password.
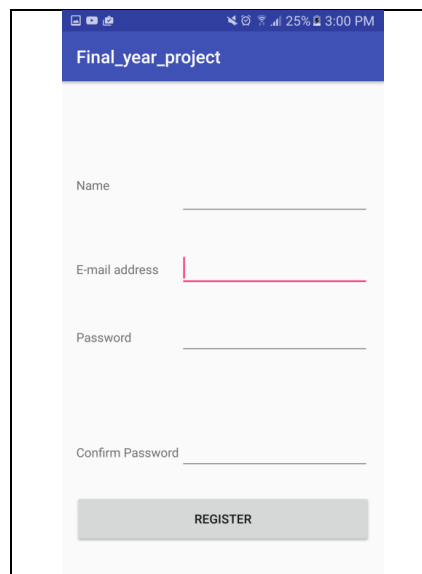
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Login

To login with the system the user must enter their e-mail address and password associated with the system.

Figure 9

Lobby

If the user has successfully logged in with the system they are brought to the lobby screen where the user is given 4 options

1. Play game – Play the licence registration game
2. Rewards   – View and purchase rewards
3. Profile   – View and edit profile details
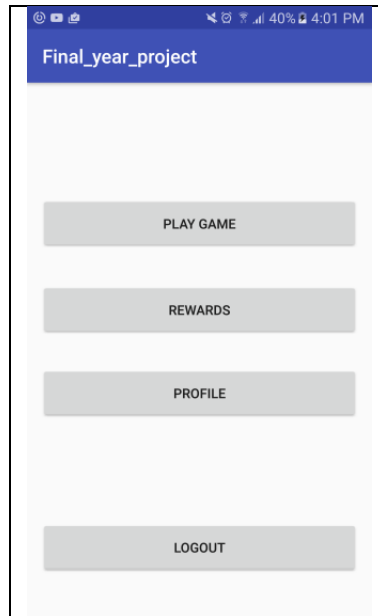4. Logout   – Log user out from the system

Figure 10

Play game

When the user chooses to play the game they are given a random image the user must determine what the image is based on the values of the modified number pickers.
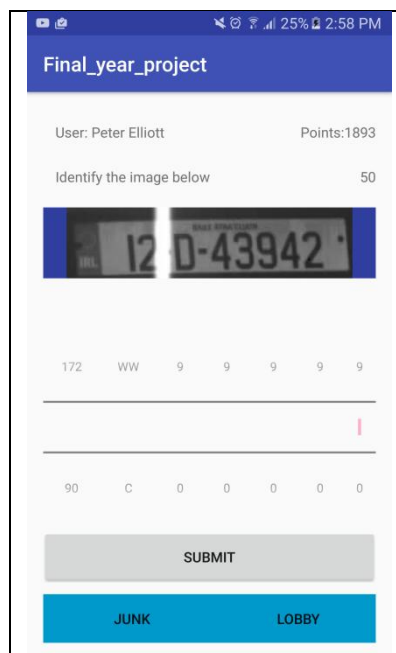

Figure 11

The user slides the number pickers up and down until they feel that they have gotten the the correct value or the best one that matches, once the user thinks this they click the submit button and a new image is loaded.
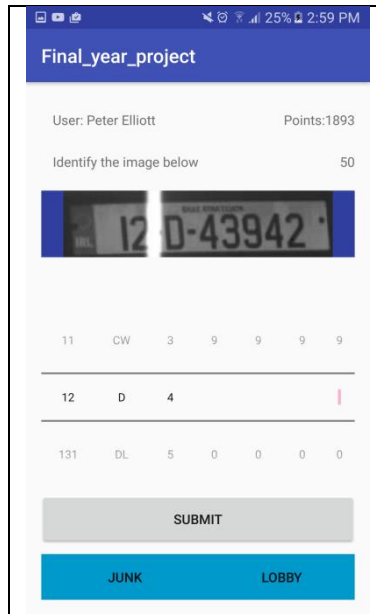
Figure 12

If the user is unable to determine the image they can click junk to state if the image is to bad to read, the point value for the image is then increased.

Rewards

The user can select a number of rewards from the system, the players can purchase based on the points they have gotten from playing the game, a player select a reward and then clicks the "Select rewards" button which then cause the value of the reward to be subtracted from the players score.
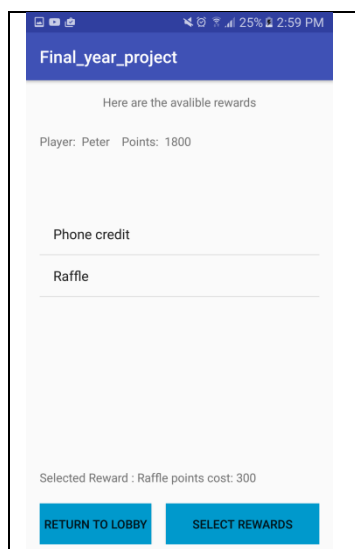

Figure 13

If the user's points are too low when they are proceeding to purchase the selected reward, they will receive a message stating so and no points will be reduced from the user's score.

Profile

The user can select a number of rewards from the system, the players can purchase based on the points they have gotten from playing the game
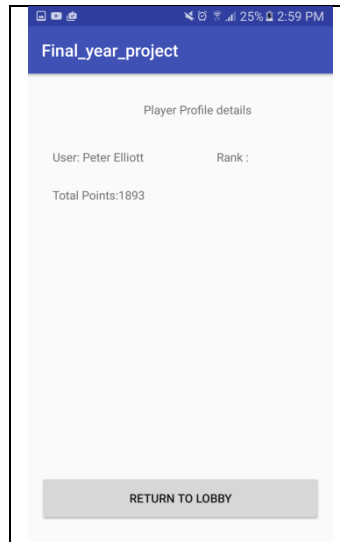

Figure 14

Logout

In the lobby users can choose to logout from the application this will them from the system updating the database as it does so
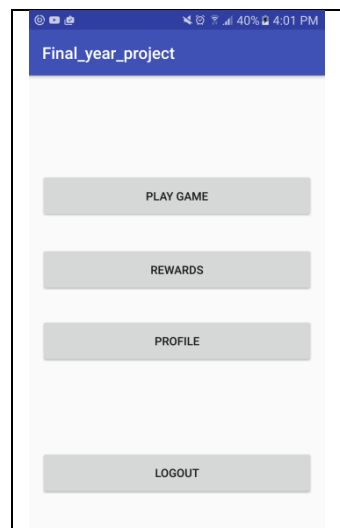

Figure 15