Institute of Technology Carlow

Software Development
4th Year Project

E- Scratch Cards

Design Document
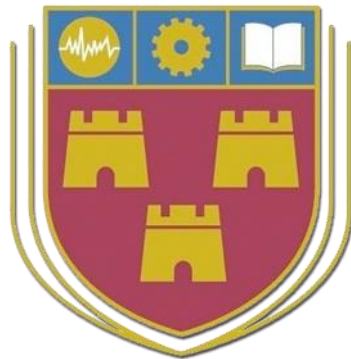
Student: Daniel Cooney

Student No:C00197455

**Supervisor:** Lei Shi

Submission Date: November 20, 2017

Contents

1. Introduction

The purpose of this document is to provide a design specification on how the E-Scratch Card application will work. The overall aim of the document is to include detailed use cases, which describe the interactions between the application, the user and the database. I will also provide system sequence diagrams that will give a better understanding the relationships with the application and the database. Finally, I include the breakdown of each iteration stage of this project and a diagram indicating the deadlines throughout the project duration.

2. Use Case Diagram
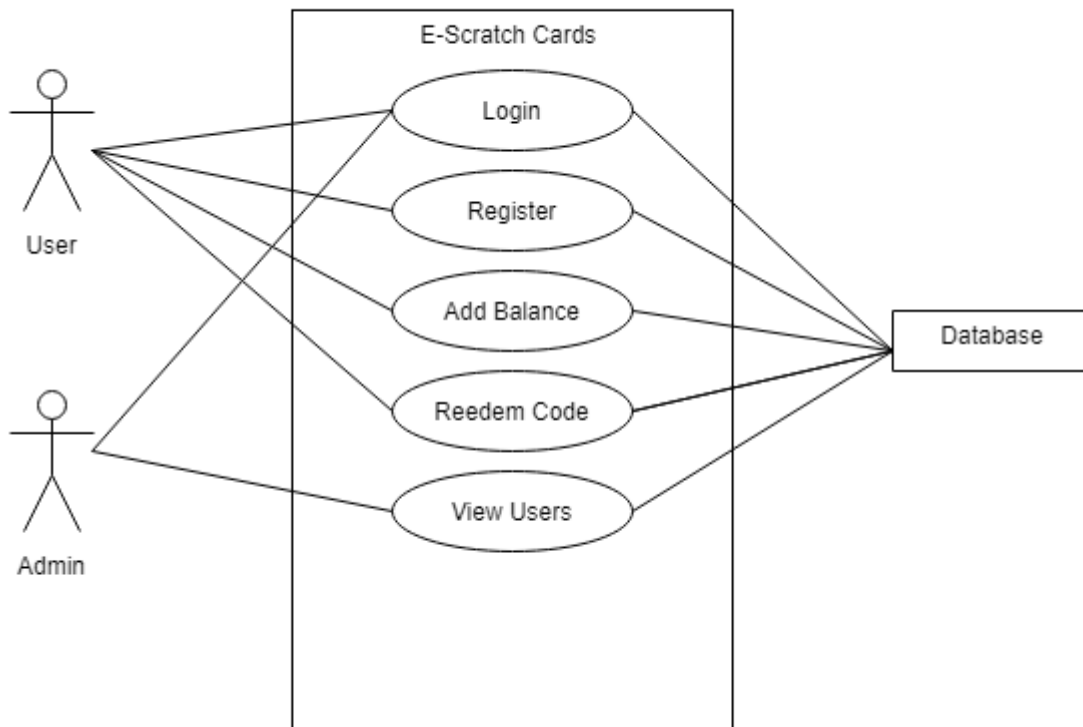
3. Detailed Use Cases

3.1 Login

Name: Login
Actors: Application User, Database System
Description: This use case begins when the user wishes to login to the application. When the user clicks on the sign in link they will be redirected to a login screen where they must enter their email address and password. The user then clicks the login button which is located directly under the input fields and then is redirected to the profile screen.

Main Success Scenario:
1. The user successfully opens the E-Scratch Cards application.
2. The user clicks the sign in link.
3. The application redirects the user to the login screen.
4. The user enters their email address and password.
5. The user clicks the login button to submit their information.
6. The application validates the user's information.
7. The database checks if the email address and password is valid.
8. The application directs the user to the profile screen.

Alternatives:

3a. The application fails to load the login screen.
1. The application displays an error message to the user.
2. The user clicks the sign in link again.
3. The application redirects the user to the login screen.

7a. The entered information by the user does not exist in the database.
1. The application displays an error message to the user.
2. The application presents the user with the login screen again.
3. The user is required to enter their email address and password again.
4. The user then clicks the login button to submit their information.

3.2 Register

Name: Register
Actors: Application User, Database System
Description: This use case begins when the user wishes to create an account. The application will display a form where the user is required to fill out their personal information. This use case ends when the user has completed filling out the form and clicks the register now button.

Main Success Scenario:
1. The user successfully opens the E-Scratch Card application.
2. The user clicks on the Register link.
3. The application redirects the user to the Register screen.
4. The user enters their information into each of the input boxes.
5. The user clicks the register button to submit their information.
6. The application validates the entered information.
7. The database stores the entered information.
8. The user's data is added to the database.
9. The application redirects the user to the login screen.

Alternatives:
5a. The information inputted is not the correct format.
 1. The application presents an error message stating which field holds the incorrect format.
 2. The application presents the user with the register screen.
 3. The user enters in the correct format in the input box.
 4. The user clicks the register button.

6a. The information inputted by the user already exists inside the database.
 1. The application presents an error message stating that the inputted email already exists within the database.
 2. The application presents the register form to the user.
 3. The user enters in a different email into the input box.
 4. The user clicks the register button to submit their information.

3.3 Logout

Name: Logout
Actors: Application User, Database System
Description: This use case begins when the user wishes to logout of the application. The user will click the logout link located on the top right of the screen. Once clicked the user will be redirected back to the home screen and the current user will successfully be logged out of the application.

Main Success Scenario:
1. The application user has successfully logged into the E-Scratch Cards application.
2. The user clicks on the log out link located at the top right of the screen.
3. The user has successfully logged out of the application.
4. The application redirects the user to the home screen.

Alternatives:
    3a. The application fails to log the user out of the application.
        1. The application presents an error message to the user.
        2. The user is redirected back to the profile screen.

3.4 Redeem Code

Name: Redeem Code
Actors: Application User, Database System
Description: This use case begins when the user wishes to redeem a code. The user clicks on the redeem code link located on the navigation bar. The user is then redirected to the Redeem code page. Here the user will fill the code into the input boxes. The user will then be presented with a message from the application stating that code entered is valid. The user will be notified the value of the entered code.

Main Success Scenario:
1. The user successfully logs into the E-Scratch Cards application.
2. The user clicks on the redeem code link located on the navigation bar.
3. The application redirects the user to the redeem code screen.
4. The user enters their code into the provided input boxes.
5. The user clicks the redeem now button.
6. The application validates the inputted information.
7. The application sends the information to the database.
8. The information is checked against the database to see if it exists.
9. The application presents the user with a message indicating what value the inputted code holds.
10. The user's data gets updated and save to the database.

Alternatives:
6a. The entered information does not match the required format.
1. The application presents an error message to the user stating that the input information is an incorrect format.
2. The application reloads the redeem code page.
3. The user enters their code into the input boxes.
4. The user clicks the redeem now button.
5. The application validates the information again.

8a. The entered information does not exist within the database.
1. The application presents an error message to the user stating that the entered code does not exist with the database.
2. The application reloads the redeem code screen.

3.5 Update Balance

Name: Update Balance
Actors: Application User, Database System
Description: This use case begins when the user wishes to update their current balance a code. The user clicks on the Update Balance link which is located on the navigation hearer. The application redirects the user to the Update Balance screen. The user is presented with an input box where they must input the amount they wish to top up by. The user is also presented with a select box that holds their credit cards associated with their account. The user selects their desired card then clicks the update balance button. The user's balance is now updated.

Main Success Scenario:
1. The user successfully logs into the E-Scratch Card's application.
2. The user clicks the Update Balance link located on the navigation menu.
3. The application redirects the user to the Update Balance screen.
4. The application presents the user with an input box, select box and an update balance button.
5. The user enters their desired amount into the input box.
6. The user selects the card they wish to pay with it.
7. The user clicks the update balance button.
8. The application validates the data that the user has provided.
9. The database updates the users balance.
10. The users new balance is saved to the database.
11. The application presents a message to the user stating the update balance was successful.
12. The application redirects the user to the profile screen.

Alternatives:
4a. The application fails to load the input box, select box and the update balance button.
  1. The application presents the user with an error message stating that the page failed to load the content
  2. The application reloads the update balance screen.

8a. The entered information does not match the required format.
  1. The application presents an error message to the user stating that the input information is an incorrect format.
  2. The application reloads the update balance page.
  3. The user enters their code into the input boxes.
  4. The user clicks the update balance button.
  5. The application validates the information again.

3.6 Account Settings

Name: Account Settings
Actors: Application User, Database System
Description: This use case begins when the user wishes to view or update any of their account information. The user clicks on the Account Setting link which is located on the navigation menu. The application redirects the user to the Account Settings screen. The application presents the user with different types of information. This page is divided up into different sections where the user can view and update their account information. The user can also view their link credit cards associated with their account. The last section is gives the user an option of deleting their account if they decide they don't want to be a member of E-Scratch Cards.

Main Success Scenario:
1. The user logs into the E- Scratch Cards application successfully.
2. The user clicks the Account Settings link that is located on the navigation menu.
3. The application redirects the user to the Account Settings screen.
4. The user is presented with different sections of information.
5. The user clicks update information.
6. The user changes some information within the input boxes.
7. The user clicks the update information button.
8. The application validates the supplied information within the inputs by the user.
9. The information within the input boxes gets added to the database.
10. The application presents the user with a message stating the information has been updated.

Alternatives:
3a. The application fails to redirect the user to the Account Settings screen.
    1. The application presents the user with an error message stating that there has been an issue with loading the page.
    2. The application reloads the profile page.
    3. The user clicks the Account Settings link again.

9a. The updated user information fails to add to the database.
    1. The application presents the user with an error message stating that there has been an issue with adding the information to the database.
    2. The application reloads the profile page.
    3. The user clicks the update information button again.

3.7 Add Card

Name: Add Card
Actors: Application User, Database System
Description: This use case begins when the user wishes to add a credit or debit card to their account. The user clicks on the Account Settings link which is located on the navigation menu. The application redirects the user to the Account Settings screen. The user then fills in their card information in the supplied fields. The user then clicks the add card button. The card is then added to the database for the specific user.

Main Success Scenario:
1. The user logs successfully into the E-Scratch Card's application.
2. The user clicks the Account Settings link that is located on the navigation menu.
3. The application redirects the user to the Account Settings page.
4. The user is presented with an add card form.
5. The user enters in the card information into the provided fields.
6. The user clicks the add card button.
7. The application validates the provided information.
8. The provided card information gets added to the database.
9. The user is presented with a message from the application that states the provided card information has been added to the database.

Alternatives:

7a.   The entered information does not match the required format.
 1. The application presents an error message to the user stating that the input information is an incorrect format.
 2. The application reloads the Account Settings page.
 3. The user enters their code into the input boxes.
 4. The user clicks the add card button.
 5. The application validates the information again.

8a.   The entered information provided already exists within the database.
 1. The application presents an error message to the user stating that the information provided already exists within the database.
 2. The application reloads the Account Settings screen.

3.8 Play Game

Name: Play Game
Actors: Application User, Database System
Description: This use case begins when the user wishes to purchase a scratch card. There are 6 play game buttons provided to the user. Each button is associated with a different type of card. The user clicks on the play game button for the type of scratch card they desired to play. The selected button will unlock the scratch card that is associated with that button. The winning amount for the scratch card will be displayed to the user.

Main Success Scenario:
1. The user logs into the E-Scratch Card's application successfully.
2. The application presents the user with 6 different scratch cards.
3. The application presents the user with 6 different play now buttons that are located under each scratch card.
4. The user picks a scratch card.
5. The user clicks the play now button that is placed under the selected card.
6. The application unlocks the scratch card.
7. If the user wins, the winning amount will be added to the user's balance in the database.
8. The application will present a message stating the amount the user won or a message stating the user has lost.

Alternatives:

6a.   The application fails to unlock the scratch card.
1. The application presents an error message to the user saying there was an error with the selected card.
2. The application reloads the page.
3. The user clicks the play now button.

7a.   The connection to the database gets interrupted.
1. The application presents an error message stating that the connection between the application and database was interrupted.
2. The application reloads the page.
3. The user clicks the play now button again.

3.9 Use Free Go

Name: Use Free Go
Actors: Application User, Database System
Description: This use case begins when the user wishes to use a free go to unlock a scratch card. There are 6 use free go buttons provided to the user. Each button is associated with a different type of card. The user clicks on a use free go button for the type of scratch card they want to unlock. The selected button will unlock the scratch card that is associated with that button.

Main Success Scenario:
1. The user logs into the E-Scratch Card's application successfully.
2. The application presents the user with 6 different scratch cards.
3. The application presents the user with 6 different use a free go buttons that are located under each scratch card.
4. The user clicks the use a free go button that is placed under the selected card.
5. The application unlocks the scratch card.
6. The total amount for the associated card will be deducted by 1.
7. This value will be updated to the database.
8. The application will present a message stating the amount the user won or a message stating the user has lost.

Alternatives:

5a.   The application fails to unlock the scratch card.
1. The application presents an error message to the user saying there was an error with the selected card.
2. The application reloads the page.
3. The user clicks the use a free go button.

3.10 Send as a Gift

Name: Send as a Gift
Actors: Application User, Database System
Description: This use case begins when the user wishes to use send a scratch card to a family member or a friend. There are 6 send to friend buttons with each button associated to a different scratch card. The user selects the card they wish to send. The application redirects the user to gift card screen. The user will be presented with text displaying what exactly happens when they click the buy now button. The user clicks the buy now button and is presented with a 12 - digit code. This code can be used to redeem a scratch card.

Main Success Scenario:
1. The user logs into the E-Scratch Card's application successfully.
2. The application presents the user with 6 different scratch cards.
3. The application presents the user with 6 different send to a friend buttons.
4. The user selects a scratch cards.
5. The user clicks the send to a friend button associated with the selected scratch card.
6. The application redirects the user to the gift card screen.
7. The user is presented with text and a buy now button.
8. The user clicks the buy now button.
9. The application generates a random 12 - digit code that the user can send to a friend or family member to redeem a scratch card.
10. The user is now presented with a 12 -digit code.
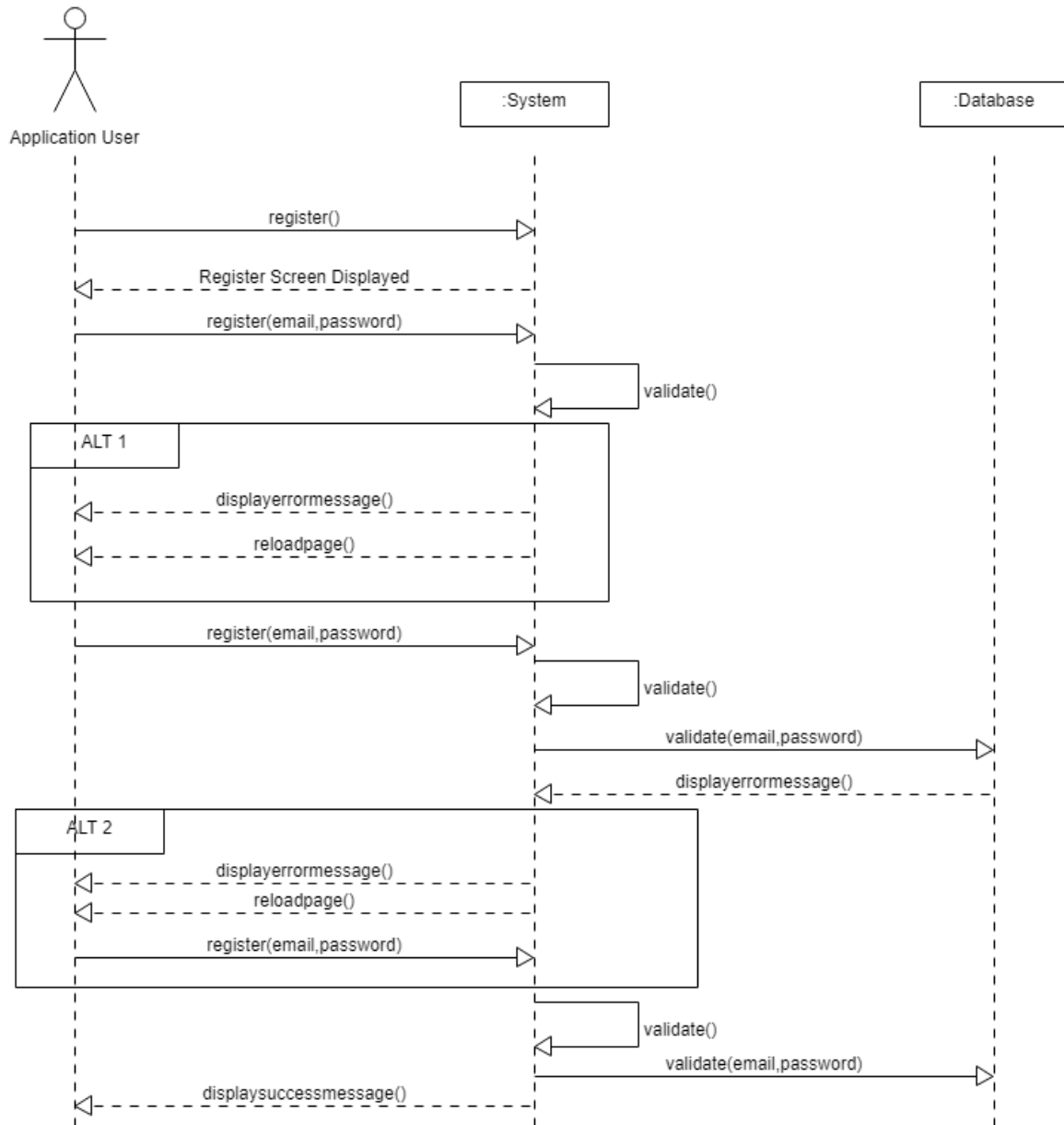

Alternatives:

9a.   The application fails to generate a 12-digit code.
  1. The application presents an error message to the user stating that the code generation has failed.
  2. The application reloads the gift card page.
  3. The user clicks the buy now button again.

4. System Sequence Diagrams
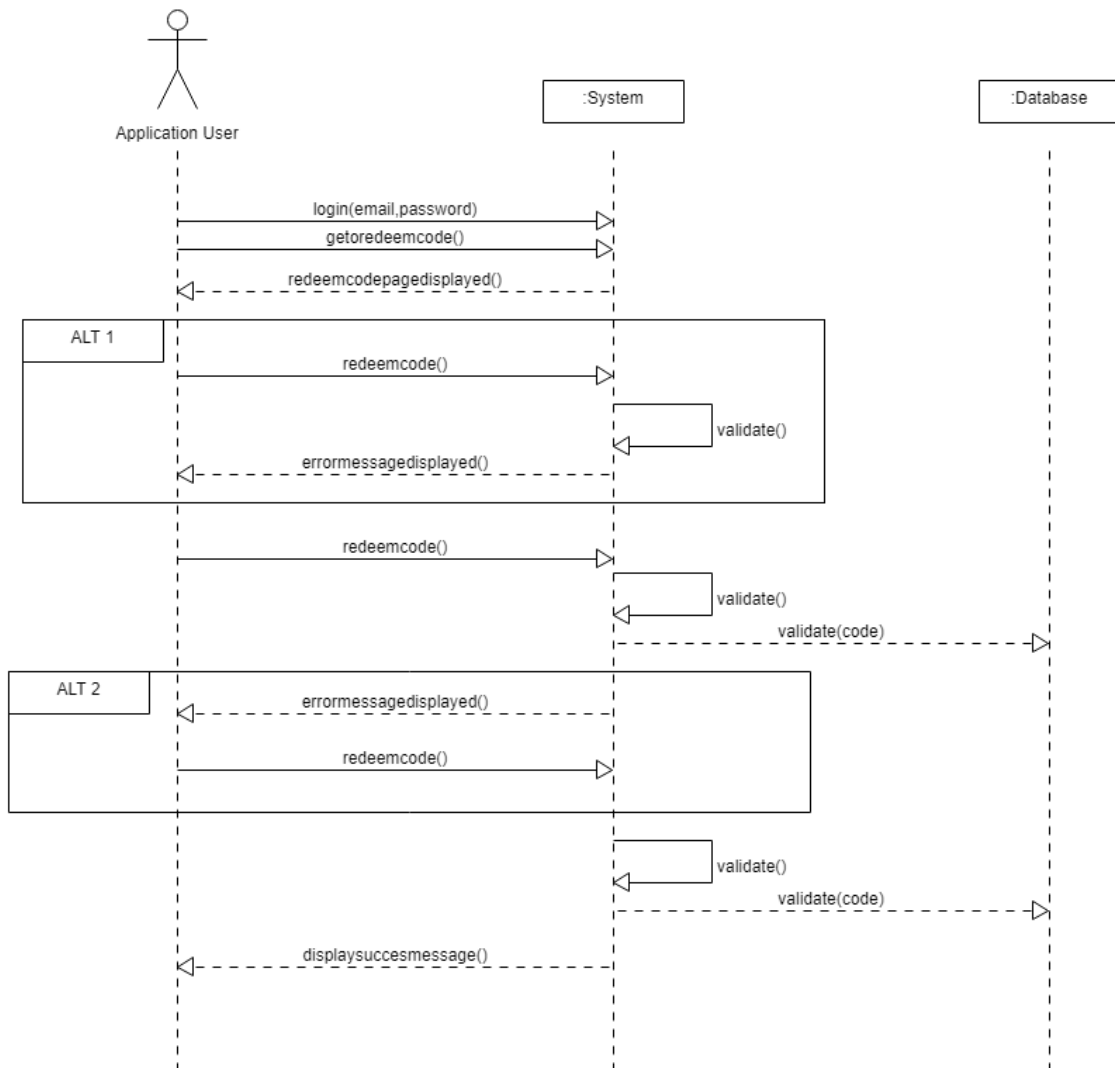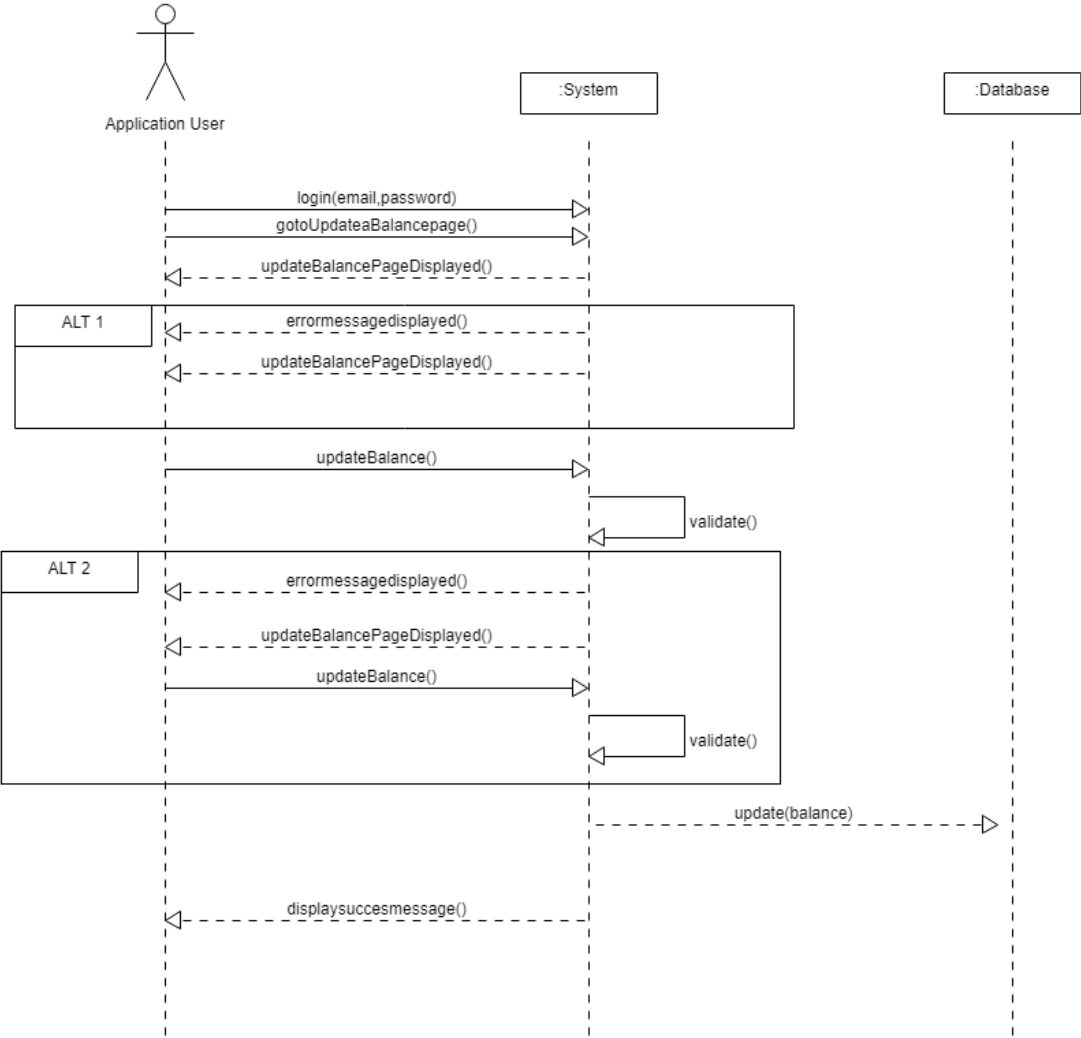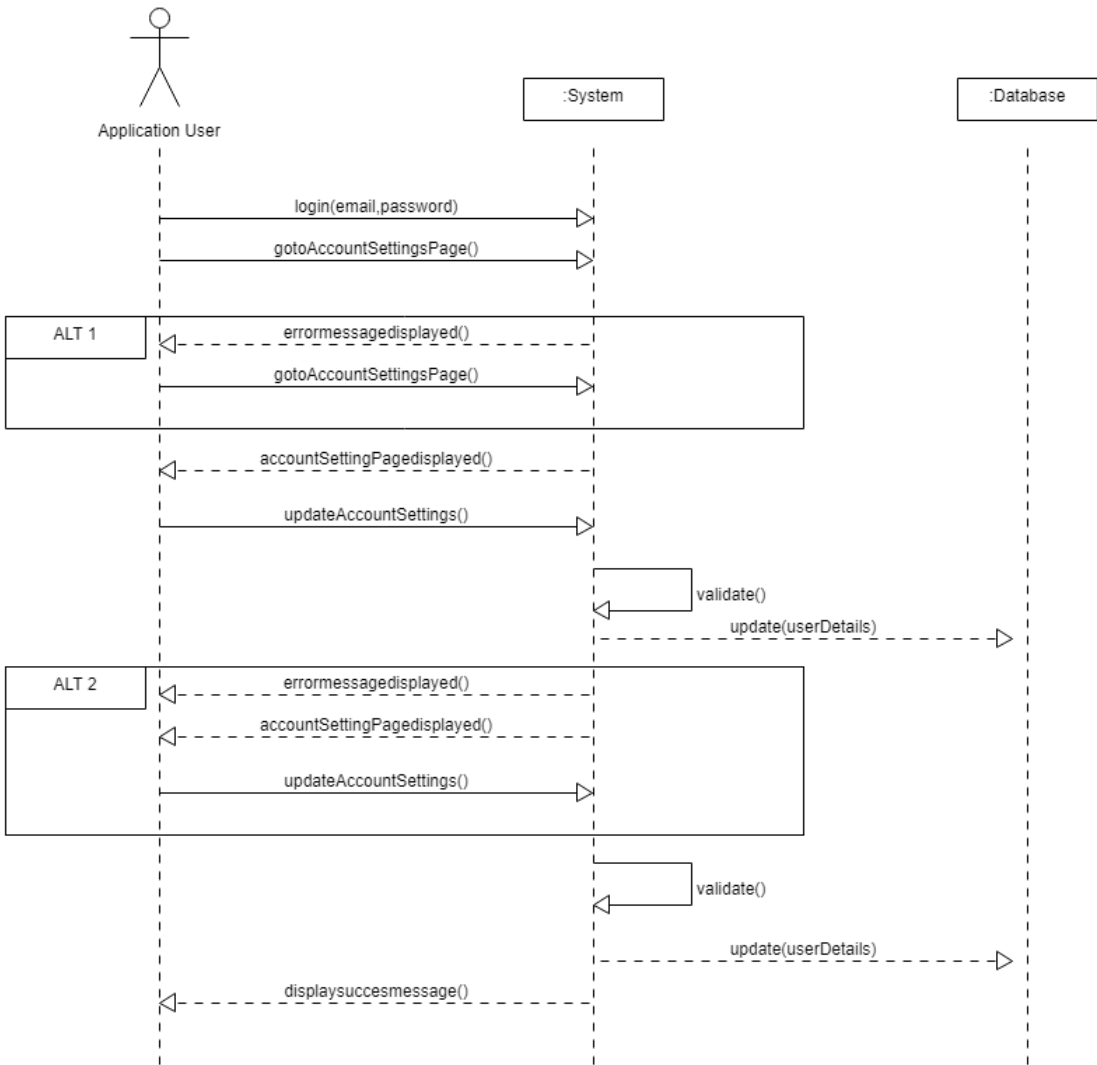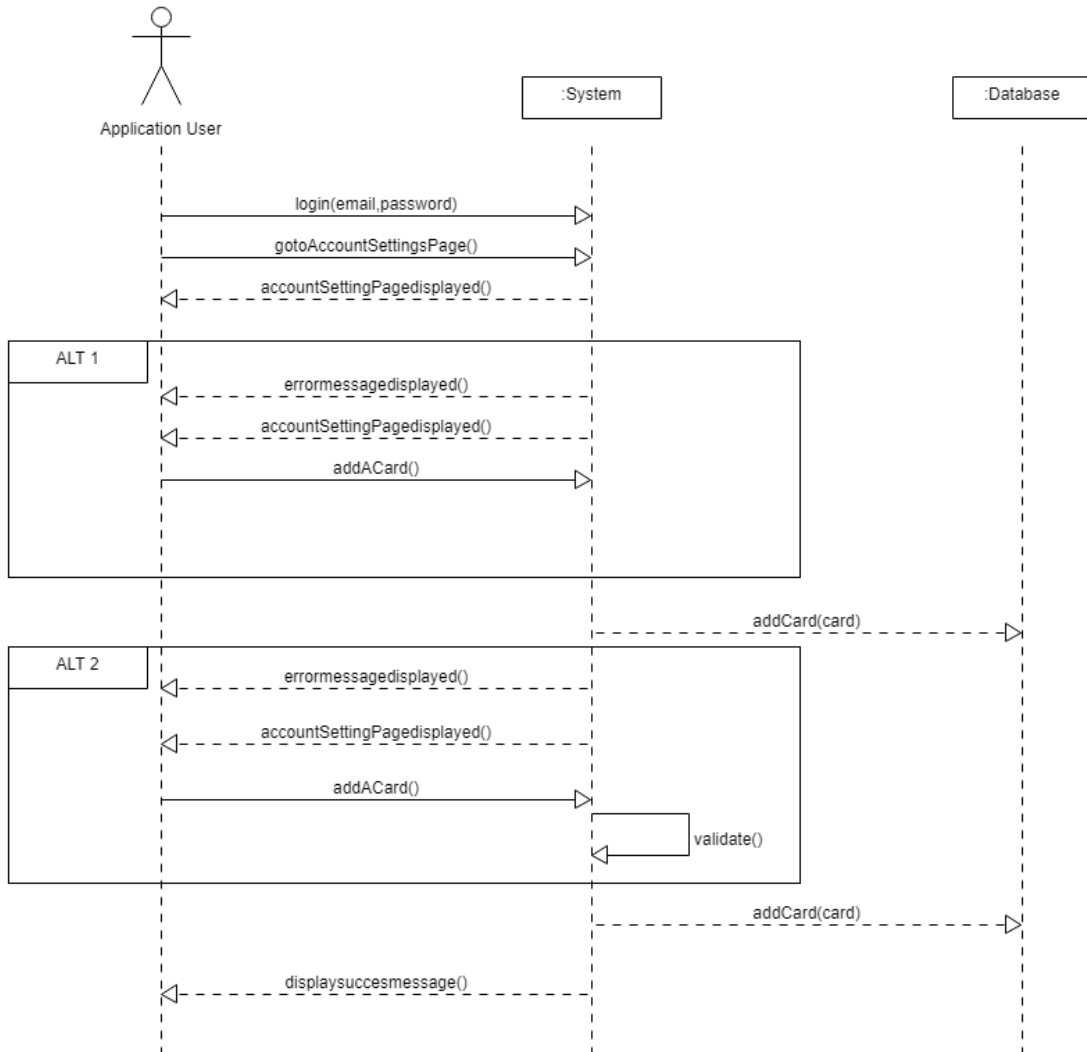
4.1 Login
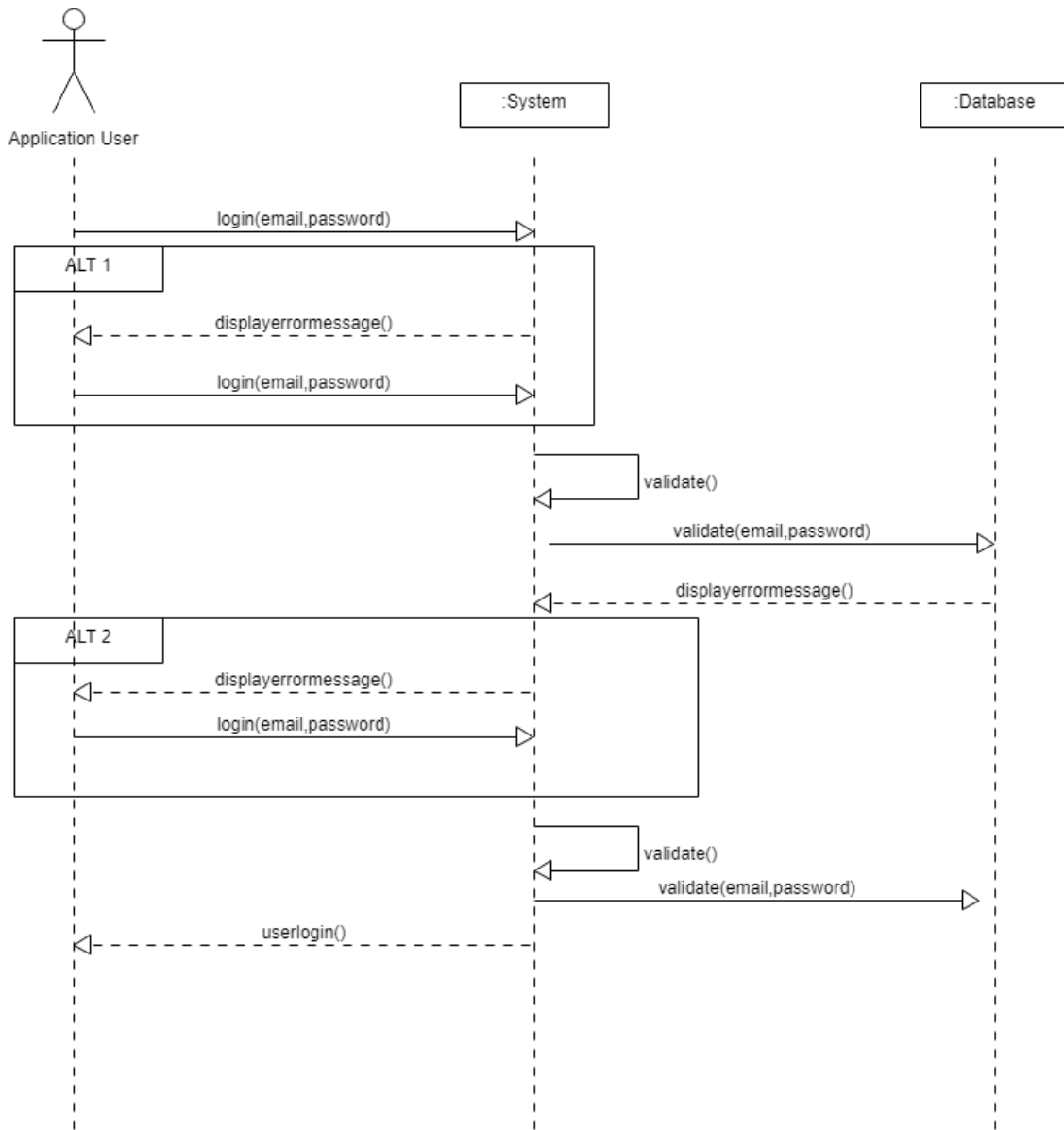
4.2 Register

4.3 Redeem Code

4.4 Update Balance

4.5 Account Settings

4.6 Add Card

5. Database Design Diagram

User Funds

- id
- balance

1

has ▶

1

Users

- id (Primary Key)
- fname
- lname
- email
- dob
- pass
- cpass
- county

has ▶

1   *

User Cards

- id
- owner
- cvv
- cardno
- expirydate
- cardadded

1

has ▶

*

Scratch cards

- type
- freego
- date
- id

has ▶

1   *

Gift cards

- type
- token
- date
- valid