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| cs408B Computer science project |
| Software Design Description |
| Team I |
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| **Ver. 1.2** |

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| --- | --- |
| Sangyong Gil | 20050730 |
| Sojung Kim | 20071132 |
| Gangmin Park | 20071154 |
| Kyeonghwan Jin | 20071222 |
| Sunghyuk Im | 20071201 |

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| This document is for the computer science project class B, Team 1. |

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Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Version1.1 | 4/20/2010 | **Order of Sections**  Section 3 is changed to Section 4  Section 4 is changed to Section 3  **Section 2**  Use case scenarios are categorized by its function  **Section 3**  Sequence diagrams are categorized by its function  **Section 6**  UI designs are categorized | 1.1 |
| Version1.2 | 5/21/2010 | **Section 5**  Deployment diagram is modified | 1.2 |

1. INTRODUCTION

# 1.1 Purpose

This document presents the design descriptions for an automated account book system for KAIST students. These design descriptions represent the detail design, which means more like implementation level, of the system of which requirements have been specified in SRS. Then the purpose of this document is following:

1. To introduce the design of this system, then to elicit feedback.

2. To serve as a guide during system implementation step.

# 1.2 Scope

This document focuses primarily on the design descriptions for an automated account book system. It covers from conceptual-level design (use case scenarios, class diagram and sequence diagrams for each usecases) to implementation-level design (deployment diagram and UI design).

# 1.3 Definitions

# 1.4. Overview

The remainder of this document will cover: Use case Scenario, Class Diagram, Sequence Diagram, Deployment Diagram, and UI Design.

2. USECASE SCENARIO

|  |
| --- |
| **2.1 General Functions**  2.1.1 Sign-in  2.2.2 Sign-out  2.1.3 Sign up  2.1.4 Edit user information  2.1.5 Manage user accounts  **2.2 Account Book Functions**  2.2.1 Show transaction list  2.2.2 Add transaction  2.2.3 Edit transaction  2.2.4 Delete transaction  2.2.5 Import a file of transaction list  2.2.6 Show a category lists  2.2.7 Add Category  2.2.8 Delete Category  2.2.9 Add Recognizing Pattern  2.2.10 Delete Recognizing Pattern  2.2.11 Show Recognizing Pattern List  **2.3 Account Report Functions**  2.3.1 Periodical Report  2.3.2 Categorical Report  **2.4 Quick Book-keeping Functions**  2.4.1 Mobile Sign-In  2.4.2 Mobile Sign-Out  2.4.3 Mobile Shortcut Input  2.4.4 Shortcut List  2.4.5 Add Shortcut  2.4.6 Edit Shortcut  2.4.7 Delete Shortcut |

Table : List of Usecase Scnerios

# 2.1 General Functions

## 2.1.1 Sign-in

|  |  |
| --- | --- |
| * Use Case | Sign-in |
| * Primary Actor | User |
| * Goal in context | To sign in the web service |
| * Precondition | A user has an user account in the web service |
| * Scenario | 1. The user opens sign-in page   * 1. The user types the user’s ID in ID textbox.   2. The user types corresponding password in Password textbox.   3. The user clicks sign-in button.   4. The page redirects to main page. |
| * Exception | 5.a If the user account is not exist or the password is not correct, an error message pops up, and the page doesn’t redirect to main page. |
| * Priority | High |

## 2.1.2 Sign-out

|  |  |
| --- | --- |
| * Use Case | Sign-out |
| * Primary Actor | User |
| * Goal in context | To sign out the web service |
| * Precondition | A user has signed in the web service |
| * Scenario | 1. The user clicks sign out button  2. The page redirects to sign-in page. |
| * Exception | None |
| * Priority | High |

## 2.1.3 Sign up

|  |  |
| --- | --- |
| * Use Case | Sign up |
| * Primary Actor | User |
| * Goal in context | To create new user account |
| * Precondition | None |
| * Scenario | 1. The user opens sign-in page  2. The user clicks sign up link  3. The page redirects to sign up page  4. The user fills in the form with appropriate information  5. The user clicks “check availability” button  6. A new window pops up and shows whether typed ID is available or not.  7. The user clicks sign-in button in the previous window.  8. The page redirects to sign-in page. |
| * Exception | 7.a If typed “password” and “password confirm” are different, an error message pops up, and the page redirects to sign up page again.  7.b If typed ID is not available, the page redirects to sign up page again. |
| * Priority | High |

## 2.1.4 Edit user information

|  |  |
| --- | --- |
| * Use Case | Edit user information |
| * Primary Actor | User |
| * Goal in context | To edit user information stored in the web service |
| * Precondition | A user has signed in the web service |
| * Scenario | 1.a The user clicks my page link  1.b The user clicks user info link in “my page”  2. The page redirects to “user information page” and show current user information.  3. The user modifies information which is shown in text boxes.  4. The user clicks update button  5. The “user information page” refreshes with modified user information |
| * Exception | 5.a If typed “password” and “password confirm” are different, an error message pops up, and the page doesn’t refresh. |
| * Priority | High |

## 2.1.5 Manage user accounts

|  |  |
| --- | --- |
| * Use Case | Manage user accounts |
| * Primary Actor | Administrator |
| * Goal in context | To read user accounts status and delete user accounts |
| * Precondition | An administrator has signed in the web service |
| * Scenario | 1. The administrator clicks admin link  2. The page redirects to “user accounts page” and show user accounts status  3. The administrator clicks delete button  4. The “user accounts page” refreshes without the status of deleted user. |
| * Exception | None |
| * Priority | High |

# 2.2 Account Book Functions

## 2.2.1 Show transaction list

|  |  |
| --- | --- |
| * Use Case | Show transaction list |
| * Primary Actor | User |
| * Goal in context | To show list of transaction |
| * Precondition | A user has signed in the system. |
| * Scenario | 1. The user clicks ‘Transaction’ tab.  2. The system shows the transaction list. |
| * Exception | None |
| * Priority | High |

## 2.2.2 Add transaction

|  |  |
| --- | --- |
| * Use Case | Add transaction |
| * Primary Actor | User |
| * Goal in context | To add a new transaction |
| * Precondition | A user has signed in the system.  A user is on the ‘Transaction’ page. |
| * Scenario | 1. The user clicks ‘Add’ button 2. A new window is popped up. 3. The user fills in the form. 4. The user clicks ‘Done’ button. 5. The window is closed and the ‘Transaction’ page is refreshed. |
| * Exception | 4.a If the user inputs nothing then show an error message and goes to procedure 3 again.  4.b If the user clicks ‘cancel’ button or closes the window, the ‘Transaction’ page will not be refreshed. |
| * Priority | High |

## 2.2.3 Edit transaction

|  |  |
| --- | --- |
| * Use Case | Edit transaction |
| * Primary Actor | User |
| * Goal in context | To add a new transaction |
| * Precondition | A user has signed in the system.  A user is on the ‘Transaction’ page. |
| * Scenario | 1. The user clicks ‘Edit’ button of a transaction which is wanted to edit. 2. A new window is popped up. 3. The user edits the contents in the form. 4. The user clicks ‘Done’ button. 5. The window is closed and the ‘Transaction’ page is refreshed. |
| * Exception | 4.a If the user inputs nothing then show an error message and goes to procedure 3 again.  4.b If the user clicks ‘cancel’ button or closes the window, the ‘Transaction’ page will not be refreshed. |
| * Priority | High |

## 2.2.4 Delete transaction

|  |  |
| --- | --- |
| * Use Case | Delete transaction |
| * Primary Actor | User |
| * Goal in context | To delete a new transaction |
| * Precondition | A user has signed in the system.  A user is on the ‘Transaction’ page. |
| * Scenario | 1. The user clicks ‘Delete’ button of a transaction which is wanted to be deleted 2. The confirmation message is popped up. 3. The user clicks ‘yes’ button. 4. The ‘Transaction’ page is refreshed. |
| * Exception | 3.a If the user clicks ‘no’ button, the ‘Transaction’ page will not be refreshed, and the transaction will not be deleted. |
| * Priority | High |

## 2.2.5 Import a file of transaction list

|  |  |
| --- | --- |
| * Use Case | Import a file of transaction list |
| * Primary Actor | User |
| * Goal in context | To import a file of transaction list |
| * Precondition | A user has signed in the system.  A user is on the ‘Transaction’ page. |
| * Scenario | 1. The user clicks ‘Import’ button 2. A new window for uploading a file is popped up. 3. The user clicks ‘Browse’ button. 4. The user selects a file of transaction list 5. The user clicks ‘Next’ button 6. A new window which shows suggested category is popped up 7. The user selects appropriate categories for each descriptions from categories in drop-down menu 8. The user clicks ‘Delete’ checkbox in which the user wants to delete 9. The user clicks ‘Done’ button 10. The windows is closed 11. The ‘Transaction’ page is refreshed |
| * Exception | 5.a If the user clicks ‘cancel’ button or closes the window, the ‘Transaction’ page will not be refreshed, and the file will not be imported.  9.a If the user clicks ‘back’ button, the page will redirects to previous page |
| * Priority | High |

## 2.2.6 Show a category lists

|  |  |
| --- | --- |
| * Use Case | Show Category Lists |
| * Primary Actor | User |
| * Goal in context | To show lists of category |
| * Precondition | A user properly signs in the system. |
| * Scenario | 1. The user opens ‘My page’. 2. The user clicks the ‘Category Edit’ button. 3. The system shows the category lists. |
| * Exception | None |
| * Priority | High |

## 2.2.7 Add Category

|  |  |
| --- | --- |
| * Use Case | Add Category |
| * Primary Actor | User |
| * Goal in context | To add a new category |
| * Precondition | A user properly signs in the system.  A user clicks the ‘Category Edit’ button under the ‘My page’ menu.  i.e. A user is on the ‘Category Edit’ page. |
| * Scenario | 1. The user clicks ‘Add’ 2. The new window is pop up. 3. The user types name of category. 4. The user clicks ‘Finish’ button. |
| * Exception | 4.a If the user inputs nothing then show an error message and goes to procedure 3 again.  4.b If the user inputs the category name which is already exists then show an error message and goes to procedure 3 again. |
| * Priority | Medium |

## 2.2.8 Delete Category

|  |  |
| --- | --- |
| * Use Case | Delete Category |
| * Primary Actor | User |
| * Goal in context | To delete a category |
| * Precondition | A user properly signs in the system. And a user clicks the ‘Category Edit’ button under the ‘My page’ menu. i.e. A user is on the ‘Category Edit’ page. |
| * Scenario | 1. The user clicks ‘Delete’ button. 2. Confirm to users. 3. Category deletes. 4. Show the new category lists. |
| * Exception | None |
| * Priority | Medium |

## 2.2.9 Add Recognizing Pattern

|  |  |
| --- | --- |
| * Use Case | Add Recognizing Pattern |
| * Primary Actor | User |
| * Goal in context | To add a new recognizing pattern |
| * Precondition | A user properly signs in the system. And a user clicks the ‘Recognizing Pattern’ button under the ‘My page’ menu. i.e. A user is on the ‘Recognizing Pattern’ page. |
| * Scenario | 1. The user clicks the ‘Add description’ button. 2. New pop up window appear. 3. Input the name of description 4. Click ‘Done’ button 5. Show the new recognizing pattern lists. |
| * Exception | 3.a If the user inputs nothing then show an error message and goes to procedure 3 again.  3.b If the user inputs the description name which is already exists then show an error message and goes to procedure 3 again. |
| * Priority | Medium |

## 2.2.10 Delete Recognizing Pattern

|  |  |
| --- | --- |
| * Use Case | Delete Recognizing Pattern |
| * Primary Actor | User |
| * Goal in context | To delete a recognizing pattern |
| * Precondition | A user properly signs in the system. And a user clicks the ‘Recognizing Pattern’ button under the ‘My page’ menu. i.e. A user is on the ‘Recognizing Pattern’ page. |
| * Scenario | 1. The user clicks ‘Delete’ button. 2. Confirm to users. 3. Recognizing pattern deletes. 4. Show the new recognizing pattern lists. |
| * Exception | None |
| * Priority | Medium |

## 2.2.11 Show Recognizing Pattern List

|  |  |
| --- | --- |
| * Use Case | Show Recognizing Pattern List |
| * Primary Actor | User |
| * Goal in context | To show recognizing pattern list |
| * Precondition | A user properly signs in the system. And a user is on the ‘My Page.’ |
| * Scenario | 1. The user clicks ‘Recognizing Pattern’ button. 2. Show the recognizing pattern lists. |
| * Exception | None |
| * Priority | Medium |

# 2.3 Account Report Functions

## 2.3.1 Periodical Report

|  |  |
| --- | --- |
| * Use Case | Showing a periodical report. |
| * Primary Actor | User |
| * Goal in context | To show a periodical total income and expense report. |
| * Precondition | A user properly signs in the system.  A user clicks ‘Report’ menu, then click ‘Periodic’ sub menu |
| * Scenario | 1. The user selects period by using drop-down menu. 2. The system shows the report. |
| * Exception | None |
| * Priority | Medium |

## 2.3.2 Categorical Report

|  |  |
| --- | --- |
| * Use Case | Showing a categorical report. |
| * Primary Actor | User |
| * Goal in context | To show a categorical total income and expense report. |
| * Precondition | A user properly signs in the system.  A user clicks ‘Report’ menu, then click ‘Categorical’ sub menu. |
| * Scenario | 1. The user selects period by using drop-down menu. 2. The system shows the report. |
| * Exception | None |
| * Priority | Medium |

# 2.4 Quick Book-keeping Functions

## 2.4.1 Mobile Sign-In

|  |  |
| --- | --- |
| * Use Case | Mobile Sign-in |
| * Primary Actor | User |
| * Goal in context | For a user to sign in a mobile web service |
| * Precondition | The user has an account in the web service. |
| * Scenario | 1. The user opens a mobile sign-in page. 2. The user fills an ID and a password in each textfield. 3. The user clicks on a sign-in button. 4. The page is redirected to a mobile main page. |
| * Exception | 4.a. If the ID either the password does not match, the error message is popped up instead redirecting page.  5. The user clicks on an okay button to dismiss the popup to try again. |
| * Priority | High |

## 2.4.2 Mobile Sign-Out

|  |  |
| --- | --- |
| * Use Case | Mobile Sign-Out |
| * Primary Actor | User |
| * Goal in context | For a user to sign out a mobile web service |
| * Precondition | The user has already signed in the mobile web service. |
| * Scenario | 1. The user clicks on a sign out button.  2. A current page is redirected to a mobile sign in page. |
| * Exception | None |
| * Priority | High |

## 2.4.3 Mobile Shortcut Input

|  |  |
| --- | --- |
| * Use Case | Mobile Shortcut Input |
| * Primary Actor | User |
| * Goal in context | For a user to input a transaction by shortcut in a mobile web service. |
| * Precondition | The user has signed in the mobile web service.  The user has already created at least one shortcut to be shown on the shortcuts page. |
| * Scenario | 1. The user clicks on a shortcut.  2. The shortcuts page is redirected to a confirm page which contains category, description, and amount. Here the user can change the amount.  3. The user clicks done button  4. A current page is redirected to the shortcuts page where the remaining count for the clicked shortcut is decreased. |
| * Exception | None |
| * Priority | High |

## 2.4.4 Shortcut List

|  |  |
| --- | --- |
| * Use Case | Shortcut List |
| * Primary Actor | User |
| * Goal in context | For a user to see a list of current shortcuts in a web service. |
| * Precondition | The user has signed in the web service |
| * Scenario | The list of current shortcuts is shown on a shortcut list page. |
| * Exception | None |
| * Priority | High |

## 2.4.5 Add Shortcut

|  |  |
| --- | --- |
| * Use Case | Add Shortcut |
| * Primary Actor | User |
| * Goal in context | For a user to add a shortcut in a web service. |
| * Precondition | A user has signed in the web service. |
| * Scenario | 1. The user clicks on an add button.  2. A current page is redirected to a add page which contains empty textfields of category, description, amount, and full count.  3. The user fills the empty textfields.  4. The user clicks on a done button.  5. The page is redirected to shortcut list page. |
| * Exception | 5.a. If the addition process is failed, the error message is popped up. |
| * Priority | High |

## 2.4.6 Edit Shortcut

|  |  |
| --- | --- |
| * Use Case | Edit Shortcut |
| * Primary Actor | User |
| * Goal in context | For a user to edit a shortcut in a web service. |
| * Precondition | A user has signed in the web service. |
| * Scenario | 1. The user clicks on an edit button.  2. A current page is redirected to an edit page which contains prefilled textfields of category, description, amount, and full count of the selected shortcut.  3. The user changes the textfields.  4. The user clicks on a done button.  5. The page is redirected to shortcut list page. |
| * Exception | 5.a. If the edition process is failed, the error message is popped up. |
| * Priority | High |

## 2.4.7 Delete Shortcut

|  |  |
| --- | --- |
| * Use Case | Delete Shortcut |
| * Primary Actor | User |
| * Goal in context | For a user to delete a shortcut in a web service. |
| * Precondition | A user has signed in the web service. |
| * Scenario | 1. The user clicks on a delete button.  2. A current page is redirected to a shortcut list page where the selected shortcut is removed in the list. |
| * Exception | 2.a. If the deletion process is failed, the error message is popped up. |
| * Priority | High |

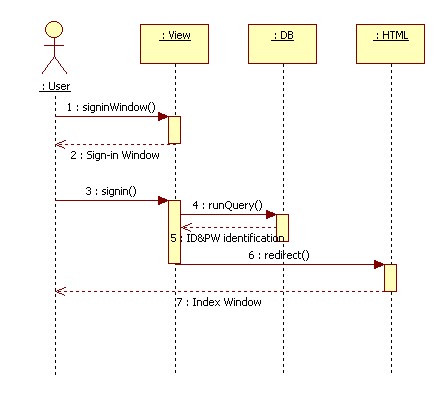
1. SEQUENCE DIAGRAM

|  |
| --- |
| **3.1 General Functions**  3.1.1 Sign-in  3.1.2 Sign-out  3.1.3 Sign up  3.1.4 Edit user information  3.1.5 Manage user accounts  **3.2 Account Book Functions**  3.2.1 Show transaction list  3.2.2 Add transaction  3.2.3 Edit transaction  3.2.4 Delete transaction  3.2.5 Import a file of transaction list  3.2.6 Show a category lists  3.2.7 Add Category  3.2.8 Delete Category  3.2.9 Add Recognizing Pattern  3.2.10 Delete Recognizing Pattern  3.2.11 Show Recognizing Pattern List  **3.3 Account Report Functions**  3.3.1 Periodical Report  3.3.2 Categorical Report  **3.4 Quick Book-keeping Functions**  3.4.1 Mobile Sign-In  3.4.2 Mobile Sign-Out  3.4.3 Mobile Shortcut Input  3.4.4 Shortcut List  3.4.5 Add Shortcut  3.4.6 Edit Shortcut  3.4.7 Delete Shortcut |

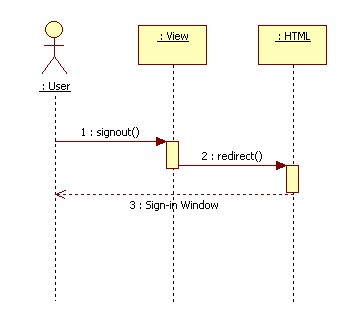
Table : List of sequence diagrams

# 3.1 General Functions

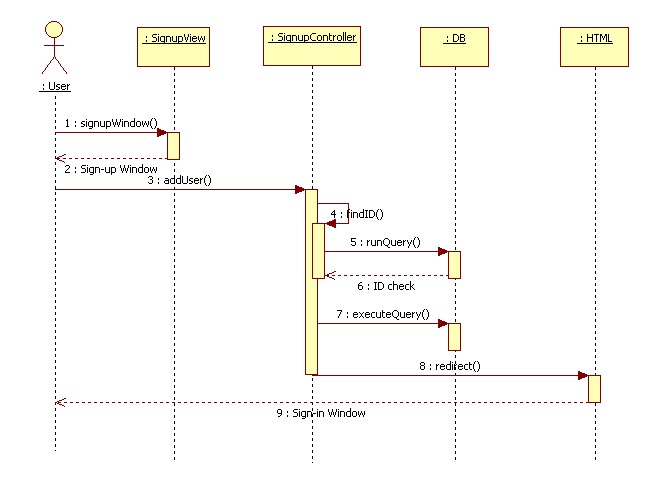
## 3.1.1 Sign-in



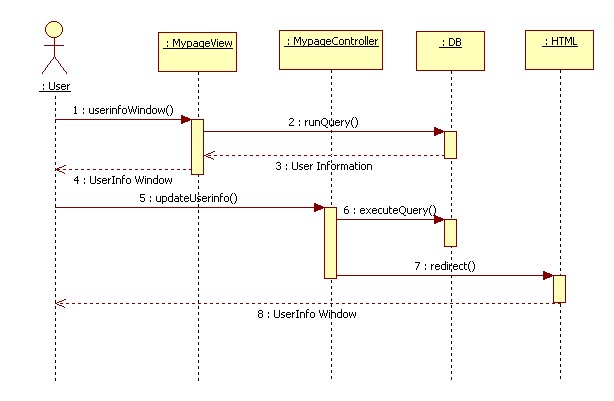
## 3.1.2 Sign-out



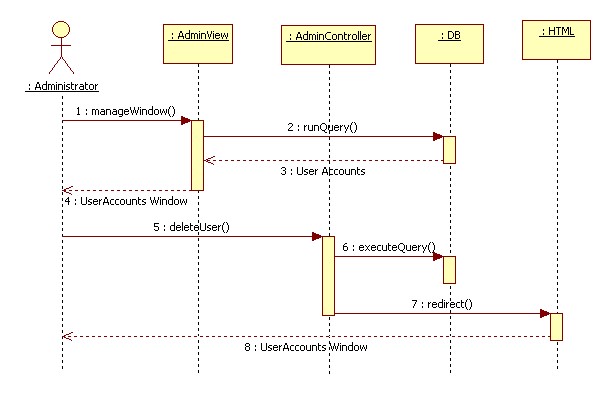
## 3.1.3 Sign up



## 3.1.4 Edit user information

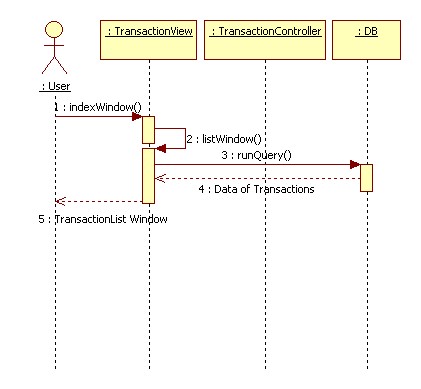


## 3.1.5 Manage user accounts

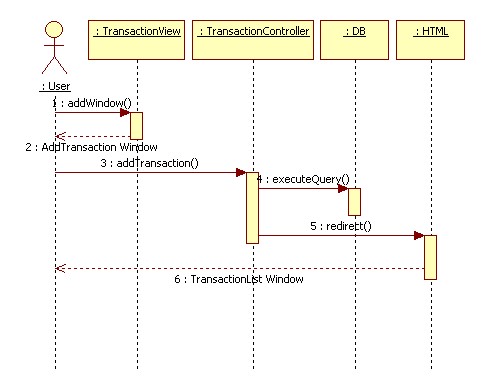


# 3.2 Account Book Functions

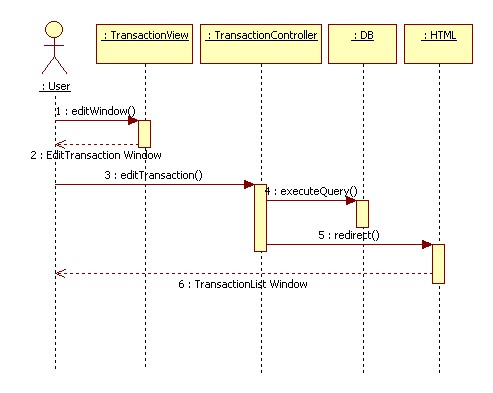
## 3.2.1 Show transaction list



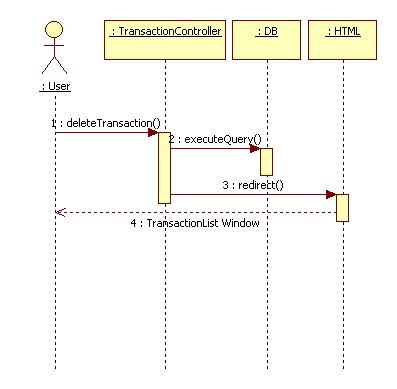
## 3.2.2 Add transaction



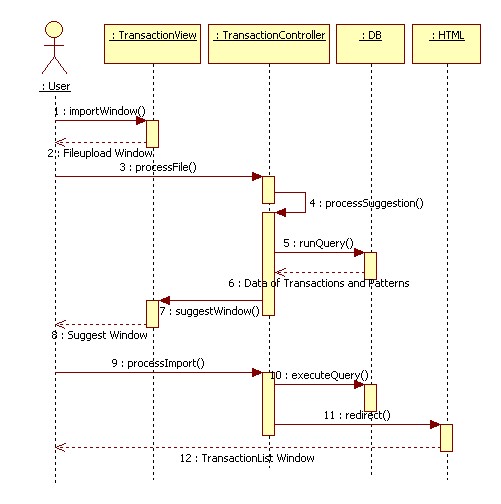
## 3.2.3 Edit transaction



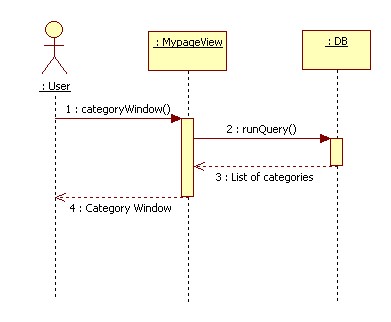
## 3.2.4 Delete transaction



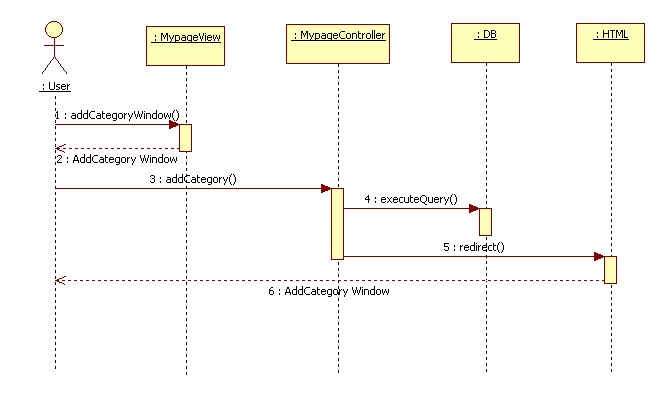
## 3.2.5 Import a file of transaction list



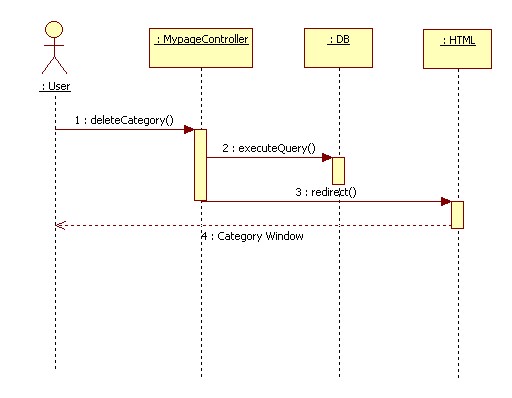
## 3.2.6 Show a category lists



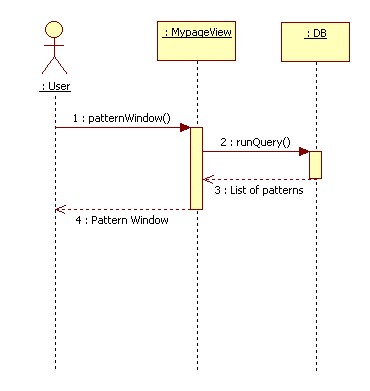
## 3.2.7 Add Category



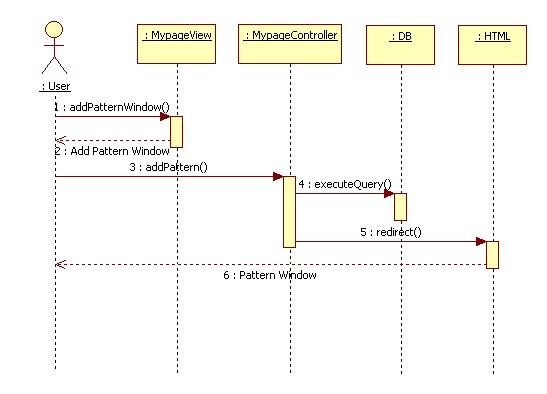
## 3.2.8 Delete Category



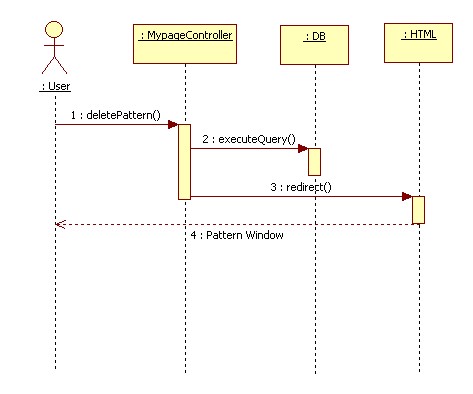
## 3.2.9 Add Recognizing Pattern



## 3.2.10 Delete Recognizing Pattern

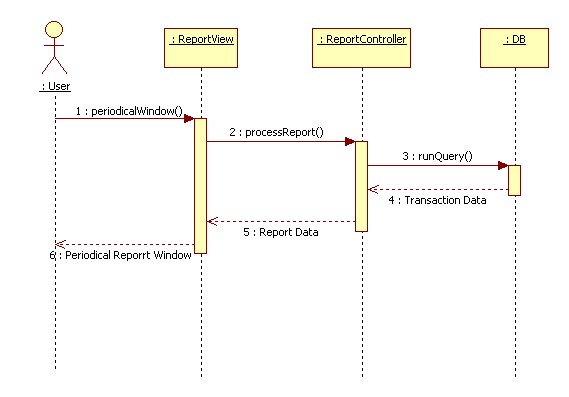


## 3.2.11 Show Recognizing Pattern List

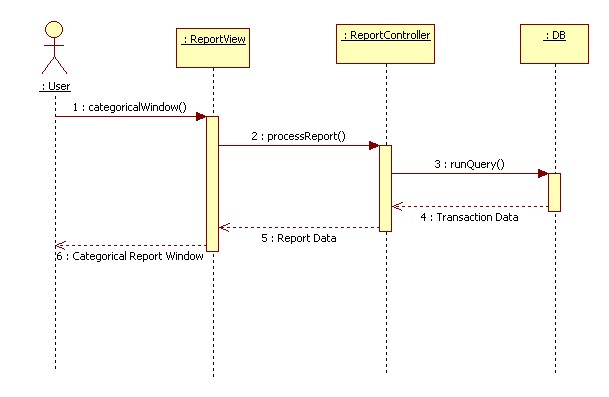


# 3.3 Account Report Functions

## 3.3.1 Periodical Report

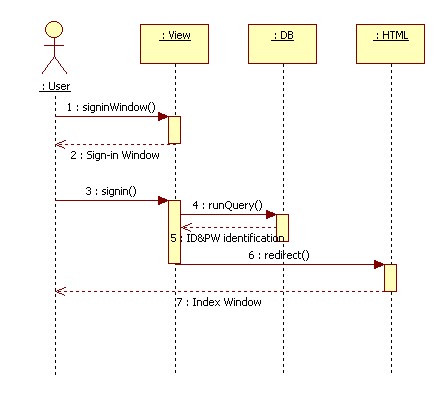


## 3.3.2 Categorical Report

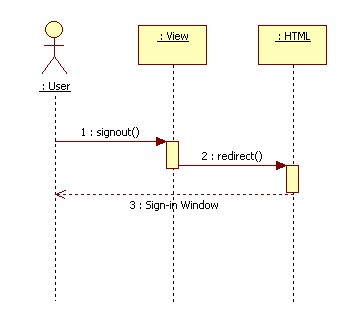


# 3.4 Quick Book-keeping Functions

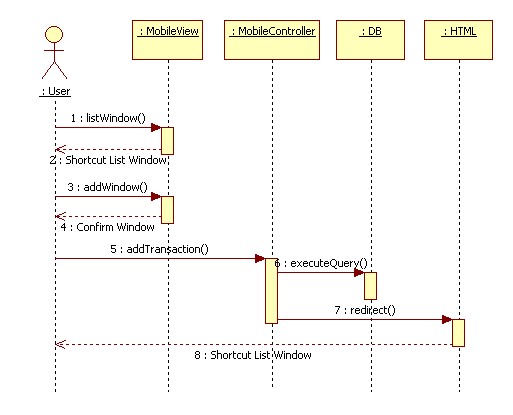
## 3.4.1 Mobile Sign-in



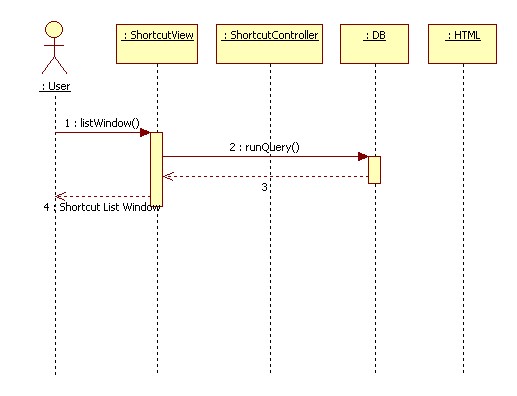
## 3.4.2 Mobile Sign-Out



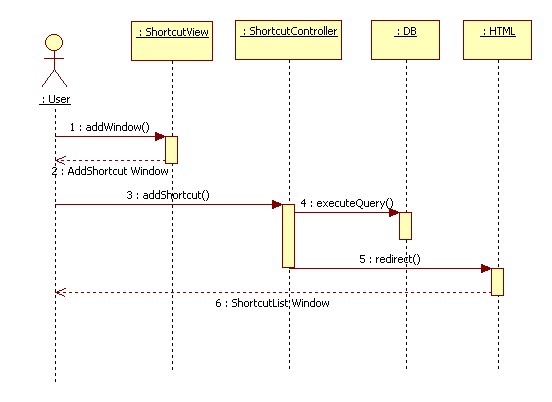
## 3.4.3 Mobile Shortcut Input



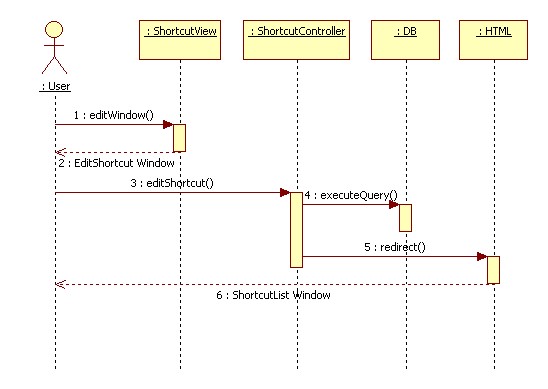
## 3.4.4 Shortcut List



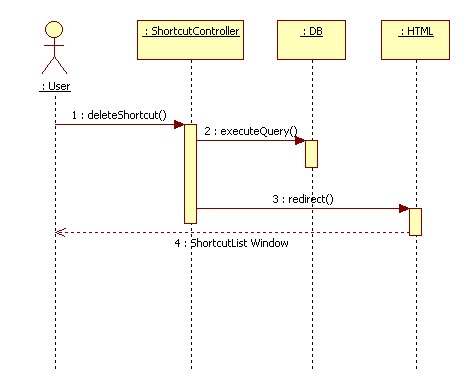
## 3.4.5 Add Shortcut



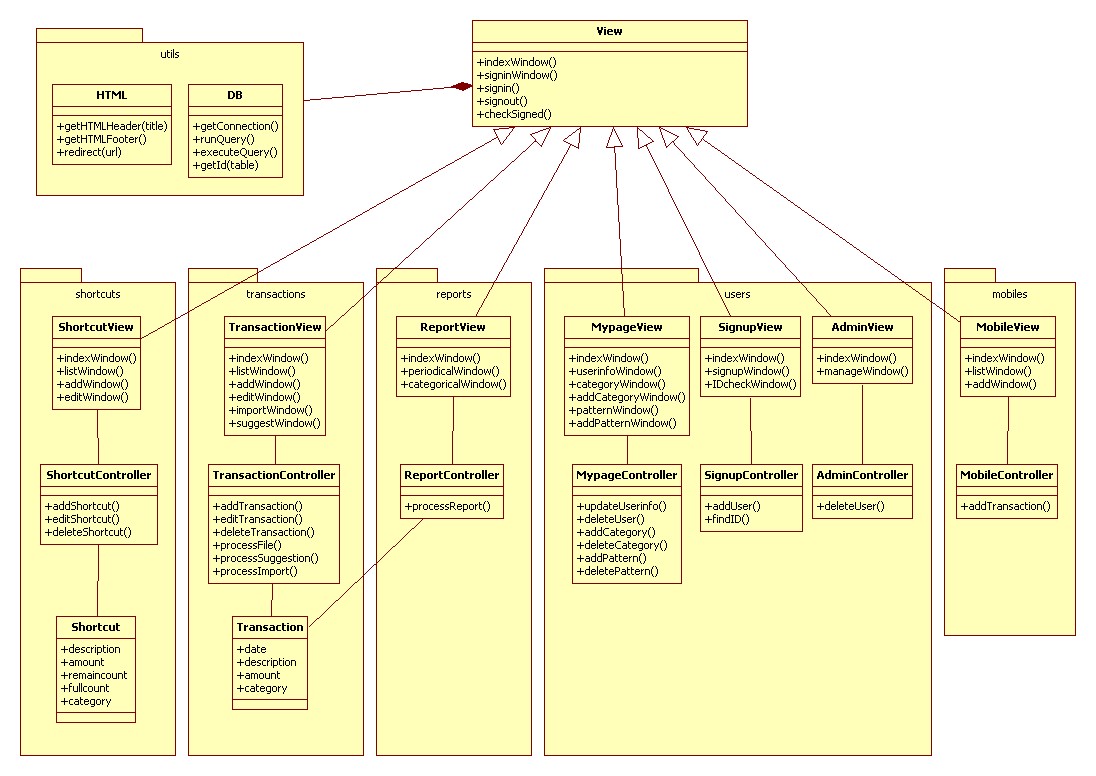
## 3.4.6 Edit Shortcut



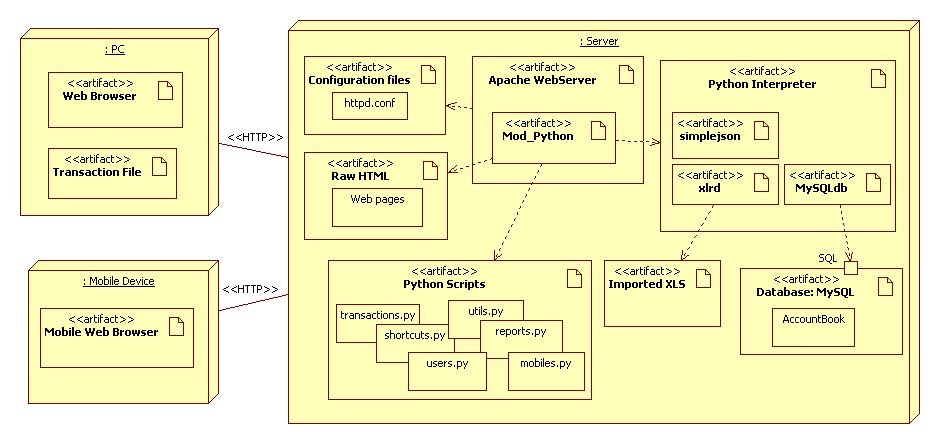
## 3.4.7 Delete Shortcut



1. CLASS DIAGRAM



1. DEPLOYMENT DIAGRAM



6. UI DESIGN

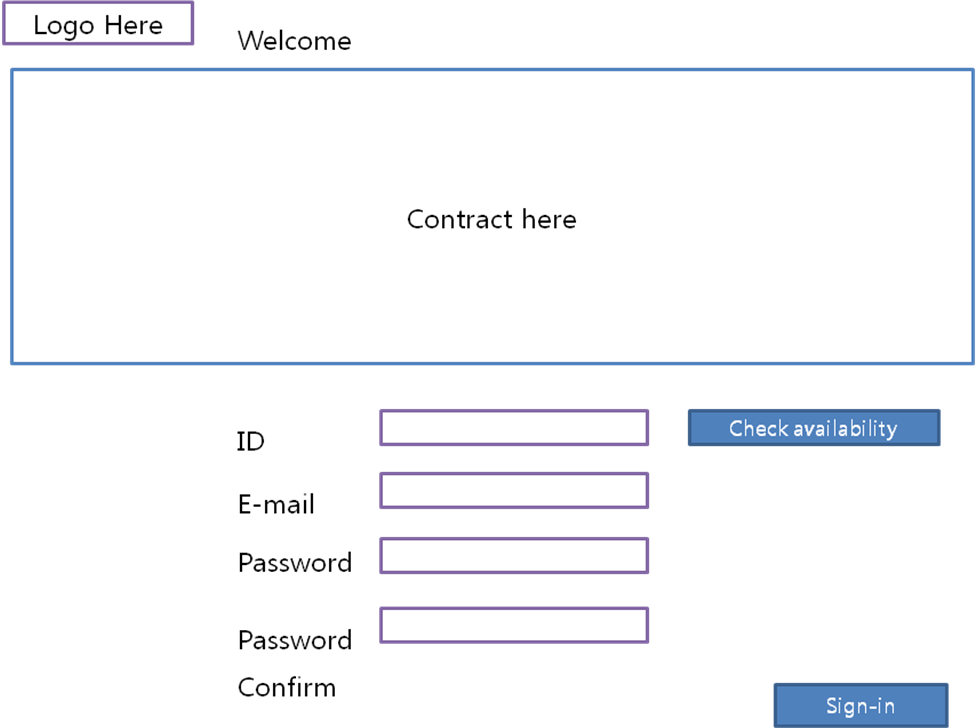
# 6.1 Main page

## 6.1.1 Sign in

This is the first page of the system. User signs in here.

## 6.1.2 Sign up

This appears when user clicks on Sign-up button on 1. User signs up here.

****

## 6.1.3 Check ID availability

These appear when user clicks on Check availability button on 2.

### 6.1.3.1 Success to check ID availability

This appears when the ID input on 2 is available.

### 6.1.3.2 Fail to check ID availability

This appears when the ID input on 2 is not available.

# 6.2 Transaction Page

## 6.2.1 Transaction List

This appears after user signed in. User can see transaction list of a certain day which can be selected on the Calendar view by user. Also user can extend the action to add, edit or delete transaction, or import transaction list.

## 6.2.2 Add Transaction

This popup window appears when user clicks on Add button on 3. User selects a category on drop-down menu, and fills the textfields of description, amount, and date of transaction.

## 6.2.3 Edit Transaction

This popup window appears when user clicks on Add button on 3. User selects a category on drop-down menu to change it, and changes the textfields of description, amount, and date of transaction.

## 6.2.4 Import

This popup window appears when user clicks on Import button on 3. User clicks on Browse file… button to open file browser, and selects a file to import. After that, user clicks on Next button to go on.

Then the suggest window appears so that user can change the description, category, or select a transaction not to add.

# 6.3 Shortcut Page

## 6.3.1 Shortcut List

This page appears when user clicks on Shortcut tab button. User can see the list of shortcuts.

## 6.3.2 Add/Edit Shortcut

This popup window appears when user clicks on Add button on 7. User selects a category on drop-down menu, and fills the textfields of description, amount, and count. (Same user interface with transaction)

# 6.4 Report Page

## 6.4.1 Periodical Report

This window appears when a user clicks ‘Report’ tab or ‘Periodic’ button on the ‘Report’ tab page. A user can see a report on income and expenses of given period.

## 6.4.2 Categorical Report

This window appears when a user ‘Periodic’ button on the ‘Report’ tab page. A user can see the income and expenses of given period, which is grouped in a category.

# 6.5 My Page

## 6.5.1 My Page – User Info

This window appears when a user clicks ‘My page’ link or ‘User info’ button on the ‘My page.’ A user can edit his/her currently stored user information such as e-mail, password. A user modifies the information and click ‘Update’ button, and then the newly updated information will be shown.

## 6.5.2 Edit Category

This window appears when a user clicks ‘Category Edit’ button on the ‘My page.’ A user can see a list of a user’s own categories.

## 6.5.3 Add Category

This window appears when a user clicks ‘Add’ button on the ‘Category Edit’ page. A user can add a category. A user inputs the desired category name and clicks ‘Done’ button, then the category will be added in the list.

## 6.5.4 Recognizing Pattern

This window appears when a user clicks ‘Recognizing Pattern’ button on the ‘My page.’ A user can see the current patterns for each category; matched descriptions grouped by a certain category.

## 6.5.5. Add Description

This window appears when a user clicks ‘Add Description’ button beside the category name on the ‘Recognizing Pattern’ page. A user can add a new description to the pattern list of category.

A user inputs a new description in the textfield and clicks ‘Done’ button, then the new description will be added to the pattern list.

# 6.6 Admin page

This window appears when a user clicks ‘Admin’ link. An administrator can see the list of users, and their status and delete a user account. An administrator clicks ‘Delete’ button of a user account, then the user account will be deleted.

# 6.7 Mobile Page

## 6.7.1 Shortcut

This window appears when a user signs in the mobile web page. A user can see the list of shortcuts and inputs a transaction by selecting a shortcut. A user selects a shortcut, then a feedback message will be shown for confirmation.

## 6.7.2 Feedback

This window appears when a user selects a shortcut in the mobile shortcut page. A user can see the category, description, and amount of money of selected shortcut. A user can edit the amount of money and records the transaction

A user edits the amount of money and clicks ‘Confirm’ button, then the information of selected data such as the category, description, edited amount of money, and current date will be stored in the user’s account book.

APPENDIX A: FIGURES AND TABLES INDEX

Table 1: List of Usecase Scenario……………………………………………………………………………………..…………..………9

Table 2: List of Sequence Diagrams……………………………………………………………………………………………………25

APPENDIX B: AUTHOURSHIPS

|  |  |
| --- | --- |
| Section | Author |
| 1. Introduction | Kyeonghwan Jin |
| 2. Usecase Scenario |  |
| Usecase Scenario 1~5 | Sangyong Gil |
| Usecase Scenario 6~10 | Sunghyuk Im |
| Usecase Scenario 11~16 | Gangmin Park |
| Usecase Scenario 17~18 | Sojung Kim |
| Usecase Scenario 19~25 | Kyeonghwan Jin |
| Class Diagram | Sunghyuk Im  Sangyong Gil  Kyeonghwan Jin |
| 4. Sequence Diagram |  |
| Sequence Diagram 1~5 | Sangyong Gil |
| Sequence Diagram 6~10 | Sunghyuk Im |
| Sequence Diagram 11~16 | Gangmin Park |
| Sequence Diagram 17~18 | Sojung Kim |
| Sequence Diagram 19~25 | Kyeonghwan Jin |
| 5. Deployment Diagram | Sangyong Gil  Sunghyuk Im |
| 6. UI Design | Sojung Kim  Gangmin Park |