SC2006 Lab 3 Deliverables

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Project Name: Kanbanize
Lab Group: SCSG

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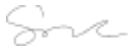
Samuel Tan	SCSG	
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Deliverables for Lab 3

- ☑ Complete Use Case Model
    - ☑ Final Use-Cases Descriptions
    - ☑ Final Use-Case Diagram
- ☑ Design Model
    - ☑ Final Class Diagram
    - ☑ Final Sequence Diagrams
    - ☑ Final Dialog Map
- ☑ System Architecture
    - ☑ Application Skeleton

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1.0 Use-Case Model

1.1 Final Use-Case Descriptions

1.1.1 Registration

Use Case ID:	1		
Use Case Name:	Registration		
Created By:	Samuel Seow	Last Updated By:	Samuel Seow
Date Created:	08/02/2024	Date Last Updated:	01/04/2024

Actor:	User, Database, System
Description:	Registration of a new user account
Preconditions:	● User has an email account. ● User does not have an account registered with this email. ● User has a unique username. ● User has a password that contains 1 of each: uppercase, lowercase and special character. ● Connection to mobile data/WiFi.
Postconditions:	● Users are able to login to access Kanbanize services.
Priority:	High
Frequency of Use:	Once
Flow of Events:	1. User is able to view Login Page. 2. User will be prompted to enter a “Username”, “Email”, “Password” and “Confirm Password”. 3. User clicks on the “Register” button. 4. User’s account is created and logged into his account, and brought to the Project List Page.
Alternative Flows:	NIL
Exceptions:	1. User’s Username is not unique: a. User is prompted to enter his Username again. 2. User’s Email Address already exists in the database: a. User is prompted to enter another Email Address. 3. User’s Password does not fulfill the requirements: a. User is prompted to enter his Password again. 4. User’s Password and Confirm Password are not the same: a. User is prompted to enter Confirm Password again.
Includes:	NIL
Special Requirements:	● User has a password that contains 1 of each: uppercase, lowercase and special character.
Assumptions:	● User is connected to the internet.
Notes and Issues:	NIL

1.1.2 Login

Use Case ID:	2		
Use Case Name:	Login		
Created By:	Senchia	Last Updated By:	Samuel Seow
Date Created:	08/02/2024	Date Last Updated:	01/04/2024

Actor:	User, Database, System
Description:	User logins to an existing account.
Preconditions:	● User has registered for an account beforehand. ● User information is stored in the database. ● Connection to mobile data/WiFi.
Postconditions:	● User is redirected to the Project List Page.
Priority:	High
Frequency of Use:	Once until logged out
Flow of Events:	1. User is on the Login Page. 2. User clicks on Login tab under the Registration tab. 3. Login interface is displayed to User. 4. User inputs unique username and password in text boxes and clicks on Login Now button. 5. Kanbanize system verifies users login credentials. 6. User is redirected to the Project List Page.
Alternative Flows:	NIL
Exceptions:	1. Incorrect username or password: a. Login UI displays “incorrect username or password”. b. System returns to step 1.
Includes:	NIL
Special Requirements:	NIL
Assumptions:	● User is connected to the internet.
Notes and Issues:	NIL

1.1.3 Logout

Use Case ID:	3		
Use Case Name:	Logout		
Created By:	Samuel Seow	Last Updated By:	Samuel Seow
Date Created:	19/03/2024	Date Last Updated:	19/03/2024

Actor:	User, System
Description:	User logs out of the system.
Preconditions:	● User was logged in. ● User is on the Kanban View Page.
Postconditions:	● User is redirected to the Login Page.
Priority:	High
Frequency of Use:	Once until logged in
Flow of Events:	1. User clicks “Log Out”. 2. User is redirected to the Login Page.
Alternative Flows:	● User clears browser cookies for Kanbanize and is logged out.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	● User has an account and is logged in. ● User is connected to the internet.
Notes and Issues:	NIL

1.1.4 Forget Password

Use Case ID:	4		
Use Case Name:	Forget Password		
Created By:	Samuel Seow	Last Updated By:	Samuel Seow
Date Created:	19/03/2024	Date Last Updated:	01/04/2024

Actor:	User, Database, System
Description:	User resets their password with “Forget Password”
Preconditions:	● User is on Login Page and is not logged in. ● User has an existing account. ● User remembers the Email Address they used to register for the account..
Postconditions:	● User is redirected to the User Registration Page.
Priority:	Medium
Frequency of Use:	Low, only when user forgets password
Flow of Events:	1. User clicks on the Login tab below the Registration tab. 2. User clicks on “Forgot Password?” 3. User enters his Email Address. 4. System sends a new password link to Email Address. 5. User is redirected to the Forget Password Page. 6. User will be prompted to enter a new Password. 7. User is redirected back to the Login Page.
Alternative Flows:	NIL
Exceptions:	NIL
Includes:	NIL
Special Requirements:	● User has a password that contains 1 of each: uppercase, lowercase and special character.
Assumptions:	● User is connected to the internet.
Notes and Issues:	NIL

1.1.5 Create Project

Use Case ID:	5		
Use Case Name:	Create Project		
Created By:	Samuel Seow	Last Updated By:	Samuel Seow
Date Created:	08/02/2024	Date Last Updated:	19/03/2024

Actor:	User, Database, System
Description:	User creates a project.
Preconditions:	● User must have a Kanbanize account. ● User must be logged in. ● User is at the Home Page.
Postconditions:	● User is redirected to the Kanban View Page for the new project.
Priority:	High
Frequency of Use:	Medium
Flow of Events:	1. User is at the Kanbanize Project List Page. 2. User clicks on “Create New Project”. 3. A new project is created and the user is brought to the new project’s Kanban View Page.
Alternative Flows:	NIL
Exceptions:	1. Project name is the same as a previously named project under the same User: a. User is prompted to input another name.
Includes:	NIL
Special Requirements:	● Project name is unique to the User.
Assumptions:	● User has an account and is logged in. ● User is connected to the internet.
Notes and Issues:	NIL

1.1.6 Switch Project

Use Case ID:	6		
Use Case Name:	Switch Project		
Created By:	Samuel Seow	Last Updated By:	Samuel Seow
Date Created:	19/03/2024	Date Last Updated:	01/04/2024

Actor:	User, System
Description:	User wants to switch between projects.
Preconditions:	● User must have a Kanbanize account. ● User must be logged in.
Postconditions:	● User is redirected to the desired project's Kanban View Page.
Priority:	High
Frequency of Use:	Medium
Flow of Events:	1. User is at the Project List Page and sees multiple projects which are under their name. 2. User clicks on the desired project to switch to. 3. User is redirected to that project's Kanban View Page.
Alternative Flows:	1. User is at the Kanban View Page in another project. 2. User presses the back button to redirect to the Project List Page. 3. User is at the Project List Page and sees multiple projects which are under their name. 4. User clicks on the desired project to switch to. 5. User is redirected to that project's Kanban View Page.
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	● User has an account and is logged in. ● User is connected to the internet. ● User has more than 1 project to switch to.
Notes and Issues:	● User can still perform this action even if they only have 1 project under their username.

1.1.7 Add Task

Use Case ID:	7		
Use Case Name:	Add Task		
Created By:	Senchia	Last Updated By:	Samuel Seow
Date Created:	08/02/2024	Date Last Updated:	19/03/2024

Actor:	User, System
Description:	User adds a task in a selected project.
Preconditions:	● User must be logged in. ● User must have a registered account. ● User is at Project List Page.
Postconditions:	● New task card shows up in chosen column.
Priority:	High
Frequency of Use:	High
Flow of Events:	1. Select the desired project. 2. Click on “+” on the top right corner of the particular column. 3. Fill in “Title”, “Description”, “Due Date” and “Progress” status. 4. Task is created once User clicks “Create”.
Alternative Flows:	1. Select the desired project. 2. Click on “Add Task” on the top left corner of the page. 3. Fill in “Title”, “Description”, “Due Date” and “Progress” status. 4. Task is created once User clicks “Create”.
Exceptions:	NIL
Includes:	● Title ● Description ● Due Date ● Progress
Special Requirements:	NIL
Assumptions:	● User has an account and is logged in. ● User is connected to the internet.
Notes and Issues:	NIL

1.1.8 Edit Task (Description)

Use Case ID:	8		
Use Case Name:	Edit Task (Description)		
Created By:	Samuel Seow	Last Updated By:	Samuel Seow
Date Created:	19/03/2024	Date Last Updated:	01/04/2024

Actor:	User, System
Description:	User updates the description of the task in a project.
Preconditions:	● User must be logged in. ● User must have a registered account. ● User must be a member of the project. ● User is in Kanban View Page.
Postconditions:	● Task card is updated with new description.
Priority:	Medium
Frequency of Use:	High
Flow of Events:	1. User clicks on the middle of a Task Card where the Description is. 2. The “Description” text box is made to be editable. 3. User types in a new Description. 4. User is redirected to a new page. 5. User fills in new description on the page. 6. User saves changes by clicking “save”.
Alternative Flows:	NIL
Exceptions:	NIL
Includes:	● Title ● Description ● Due Date ● Progress
Special Requirements:	NIL
Assumptions:	● User has an account and is logged in. ● User is connected to the internet. ● User has already created a task prior.
Notes and Issues:	NIL

1.1.9 Edit Task (Status)

Use Case ID:	9		
Use Case Name:	Edit Task (Status)		
Created By:	Willy	Last Updated By:	Samuel Seow
Date Created:	08/02/2024	Date Last Updated:	01/04/2024

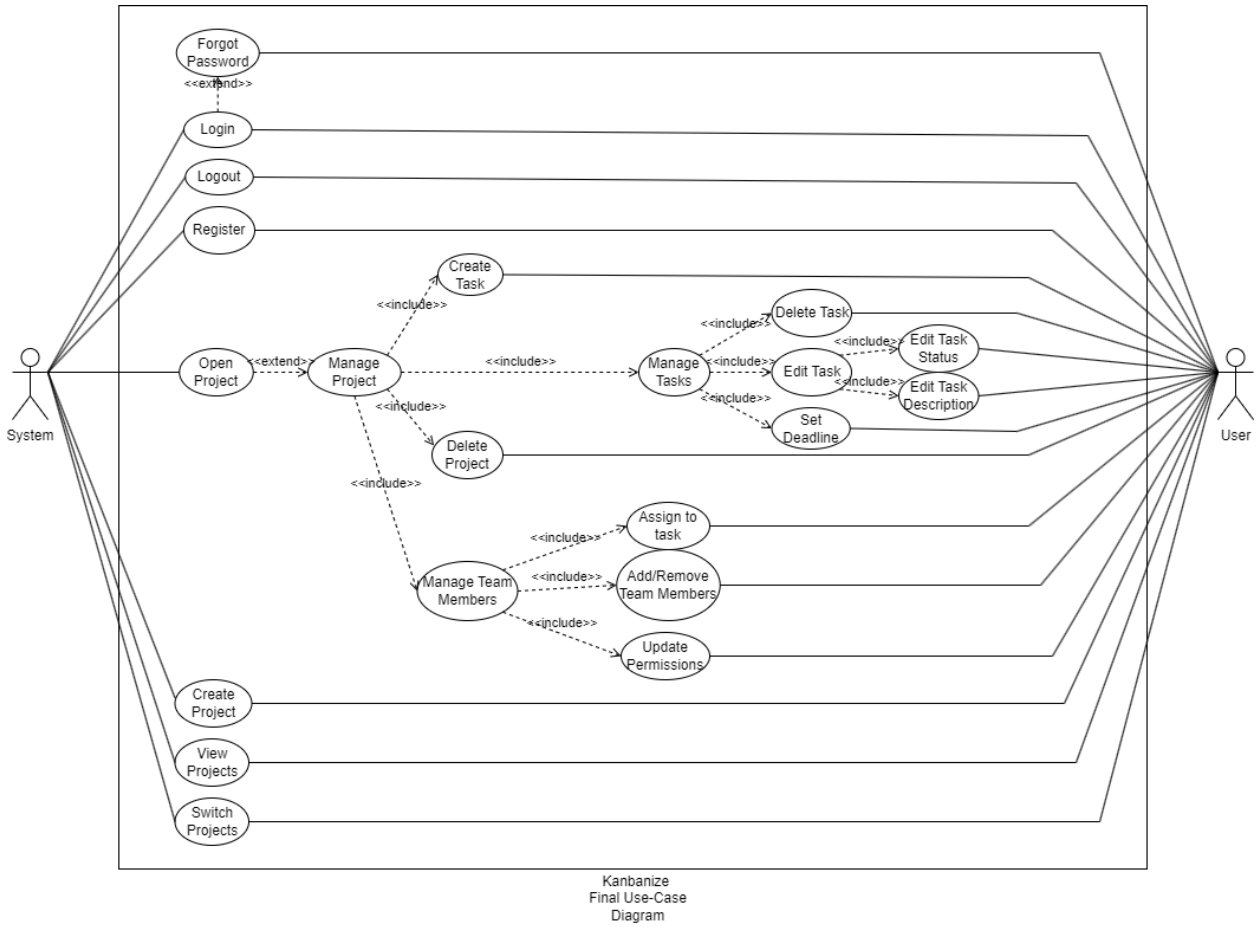
Actor:	User, System
Description:	User updates the status of the task in a project.
Preconditions:	● User must be logged in. ● User must have a registered account. ● User must be a member of the project. ● User is in Kanban View Page.
Postconditions:	● The status of the task is updated.
Priority:	Medium
Frequency of Use:	High
Flow of Events:	1. User clicks and holds on a Task Card. 2. User drags the Card to another Column. 3. User releases the click.
Alternative Flows:	NIL
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	● User has an account and is logged in. ● User is connected to the internet. ● User has already created a task prior.
Notes and Issues:	NIL

1.1.10 Delete Task

Use Case ID:	10		
Use Case Name:	Delete Task		
Created By:	Samuel Seow	Last Updated By:	Samuel Seow
Date Created:	19/03/2024	Date Last Updated:	01/04/2024

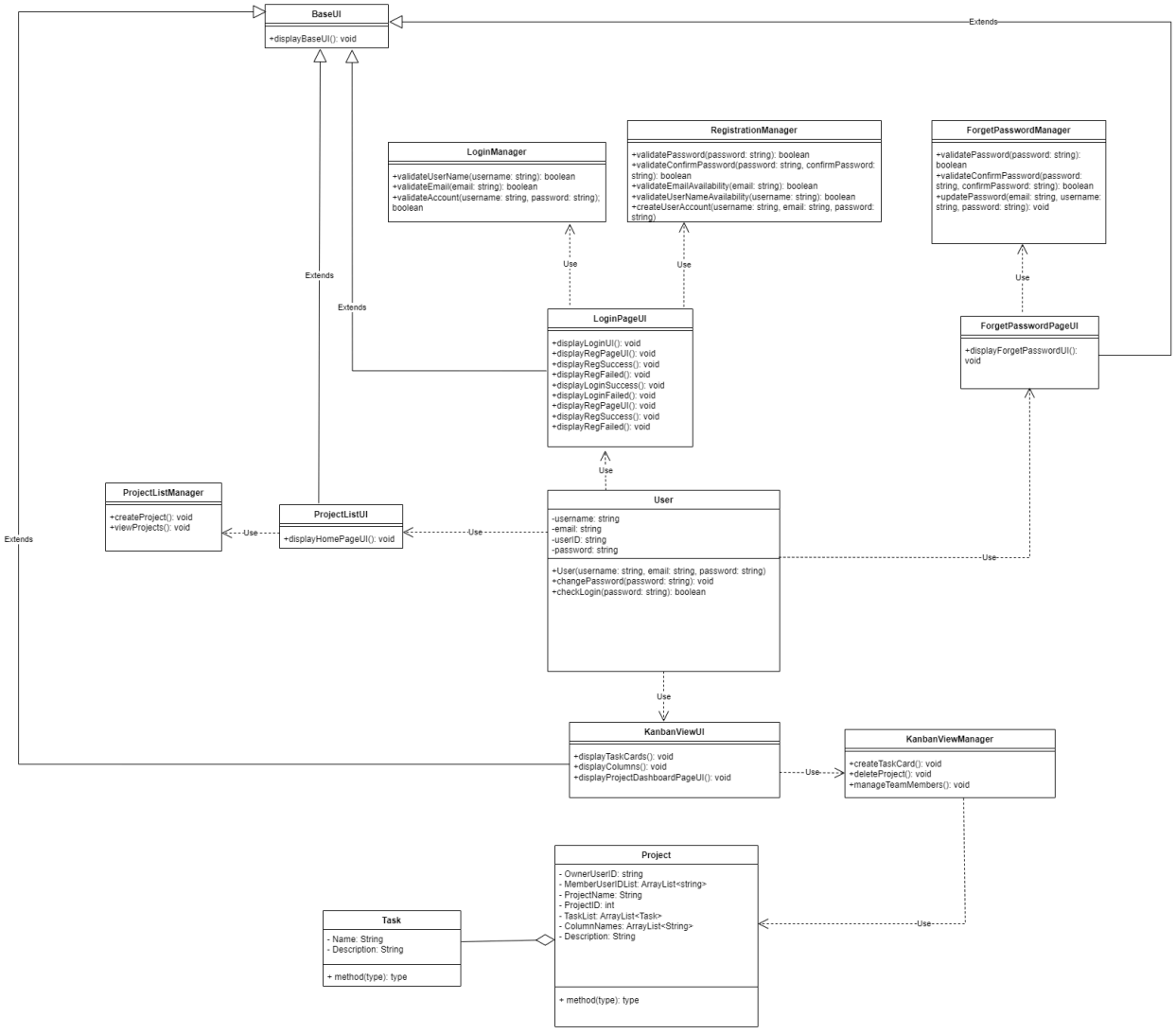
Actor:	User, System
Description:	User deletes a task from the project.
Preconditions:	● User must be logged in. ● User must have a registered account. ● User must be a member of the project. ● User is in Kanban View Page.
Postconditions:	● The task is removed from the system.
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	1. User clicks on a task card. 2. User clicks on the “trash can” icon on the top right-hand of the Task Card window. 3. User is prompted with “Delete this task?” 4. User selects “Delete” and deletes the task.
Alternative Flows:	NIL
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	● User has an account and is logged in. ● User is connected to the internet. ● User has already created a task prior.
Notes and Issues:	NIL

1.2 Final Use-Case Diagram



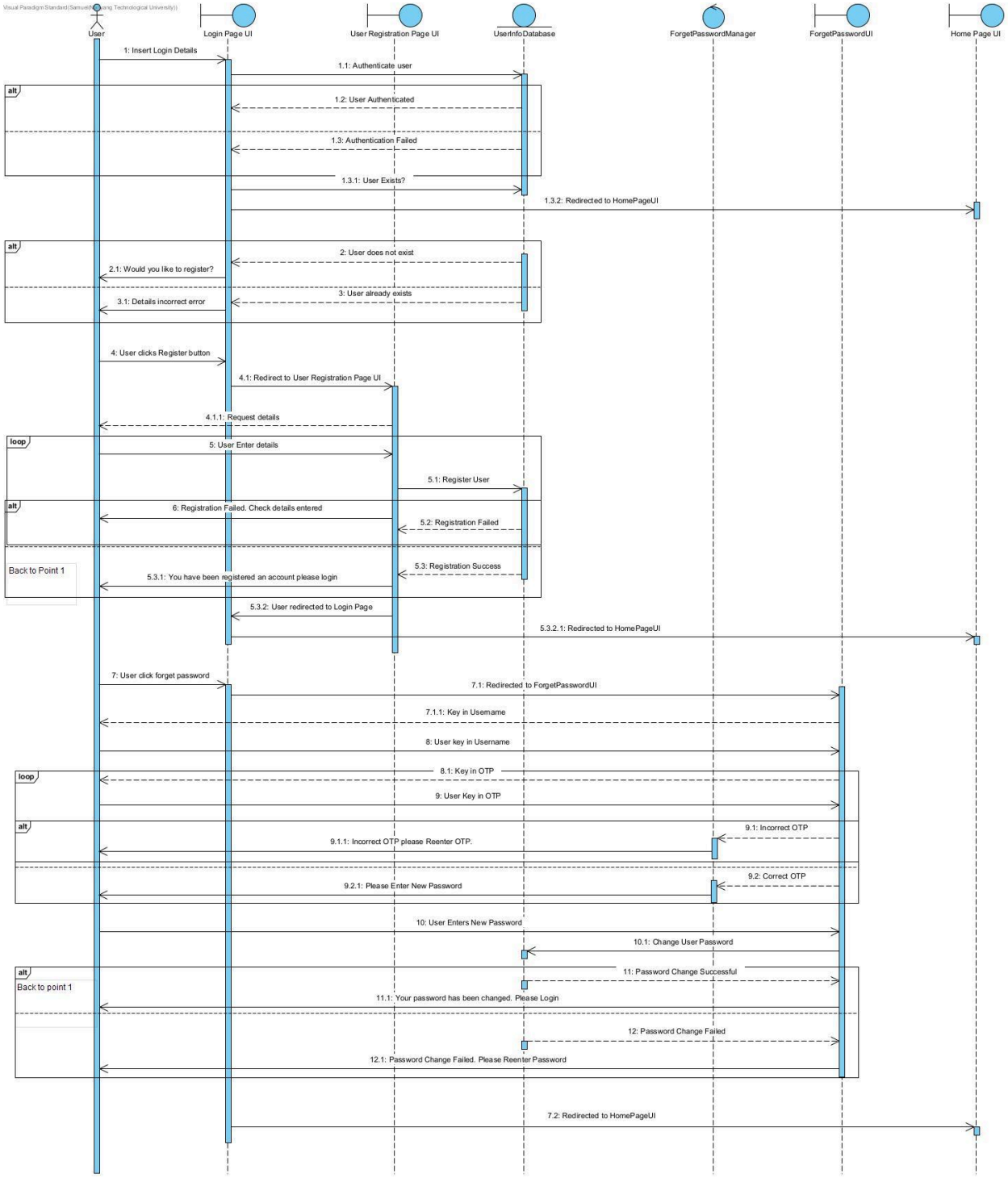
2.0 Design Model

2.1 Final Key Boundary Class Diagram

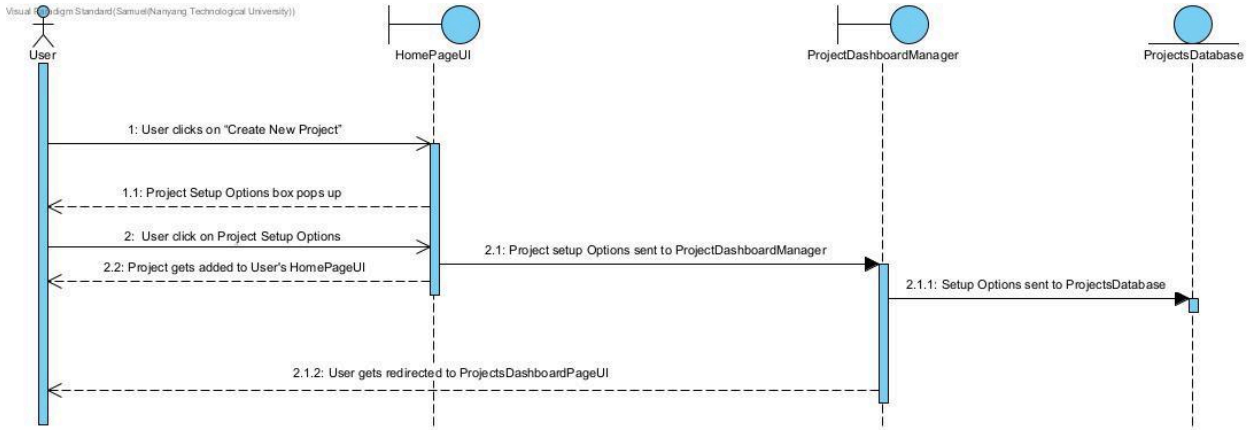


2.2 Final Sequence Diagrams

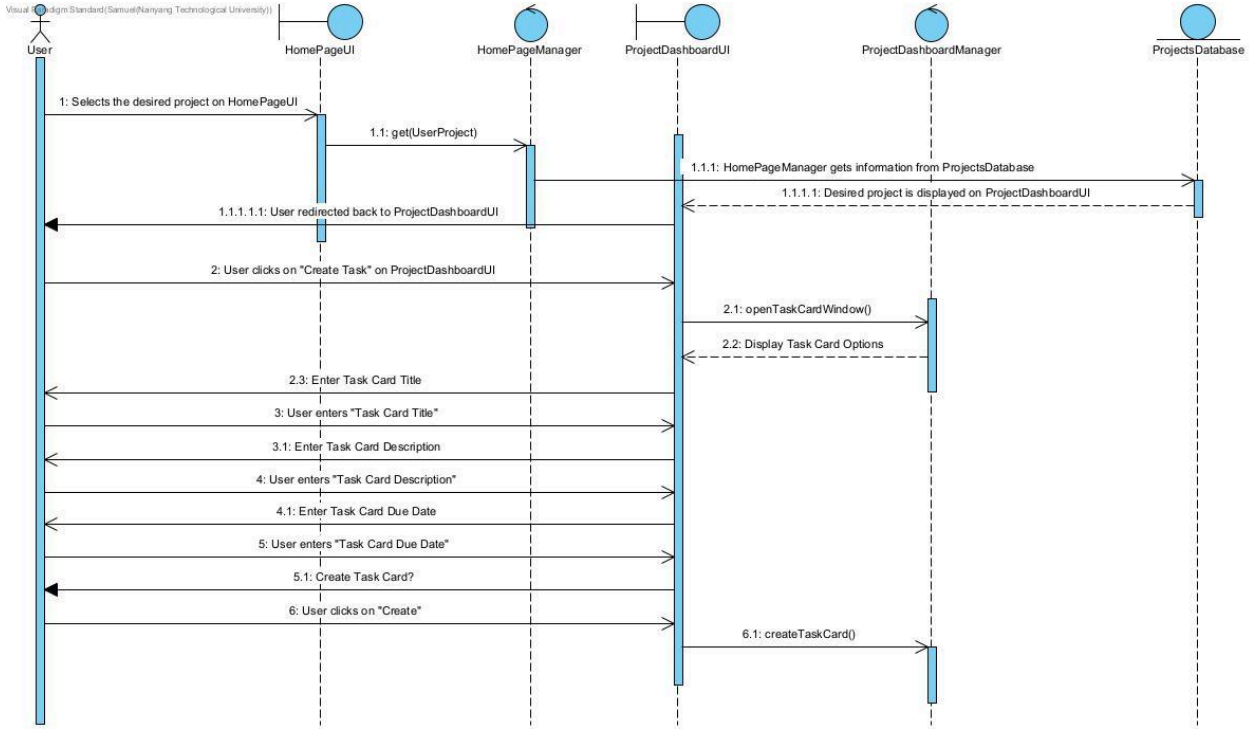
2.2.1 Registration and Login



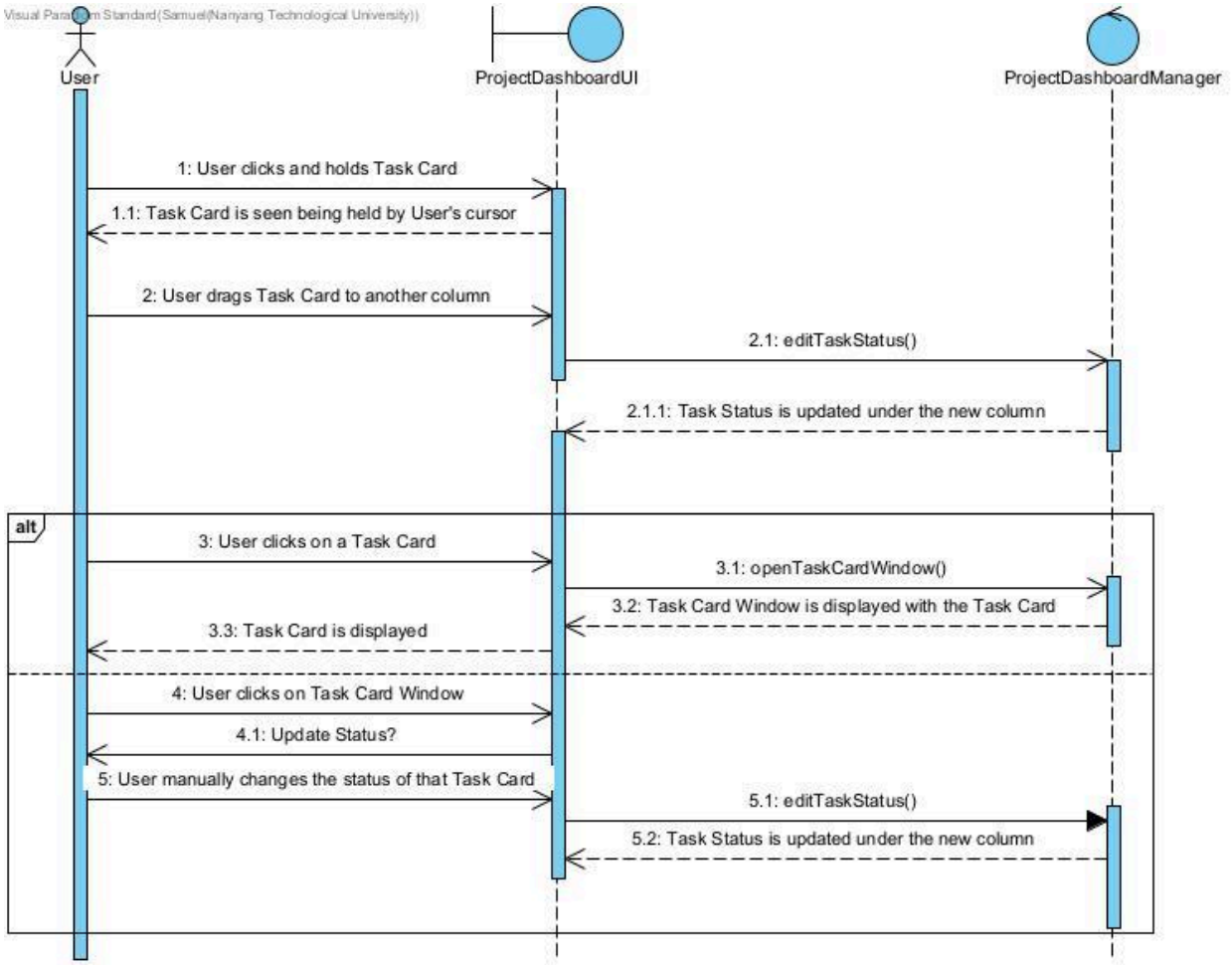
2.2.2 Create Project



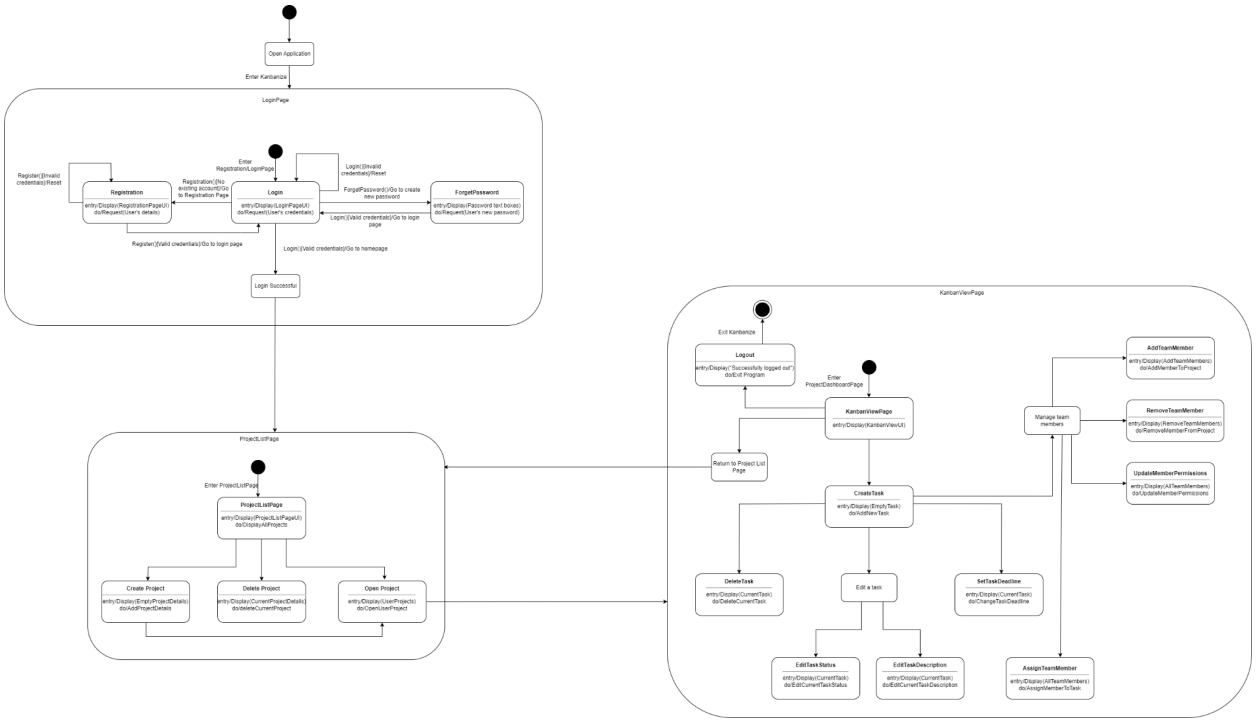
2.2.3 Add Task



2.2.4 Edit Task (Status)

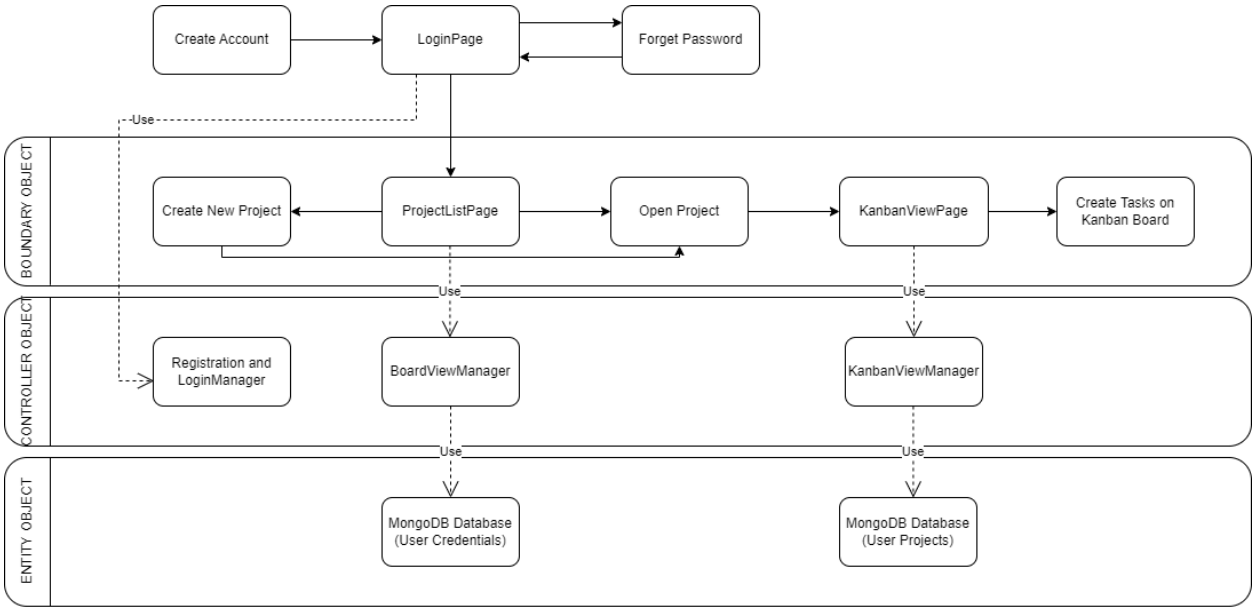


2.3 Final Dialog Map



3.0 System Architecture

3.1 Application Skeleton



4.0 Final Documentation

4.1 Functional Requirements

1. The system must have a User Registration interface.
    1.1. The system must display one text field for Username.
    1.2. The system must display one text field for Email Address.
    1.3. The system must display one text field for Password.
    1.4. The system must display one text field for Confirm Password.

2. The system must display a “Register” button.
    2.1. When the user clicks “Register”, the system must validate that all required fields are not empty.
    2.2. When the user clicks “Register”, the system must validate that the Email Address entered is valid.
    2.3. When the user clicks “Register”, the system must validate that the password entered must meet the following requirements:
        2.3.1. A minimum of 8 characters in length.
        2.3.2. Contains at least one character from three of the following categories: Uppercase letter (A-Z) Lowercase letter (a-z) Digit (0-9) Special character (~`!@#$%^&*()_-+={}[]|\:;”’<>,.?/).

3. The system must have a **Login Page** with a Login interface.
    3.1. The system must request the user’s username and password.
        3.1.1. Users must create unique usernames.
    3.2. The system must allow users to reset their account passwords through a “Forgot Password” button.
    3.3. When the user enters a username that is not in the database, the system must prompt the user that “The username is not found.”.
    3.4. When the user enters a username in the database and the wrong password, the system must prompt the user that “The password is incorrect.”
    3.5. When the user enters a username in the database and the correct password, the system must redirect the user to the Project List Page.

4. The system must have a Forget Password Page with a Forget Password interface.
    4.1. The system must display one text field for the user to enter their registered email address.
    4.2. The system must display a text field for the user to enter their new password.
        4.2.1. The system must require the user to type in the new password twice to ensure the accuracy of the password.

5. The system must have a **Project List Page**.
    5.1. The system must display a button to create new projects.
        5.1.1. The system must display one text field for Project Name.
    5.2. The system must display the current projects the user is a part of.
    5.3. The system must redirect the user to the Kanban View of the project that the user selected.

6. The system must have a **Kanban View Page** for each of their projects.
    6.1. The Kanban View Page of the system must contain the main functionalities of the Kanban Board that the user can use.
    6.2. The system must display 4 distinct columns to represent different stages of the workflow. (To Do, In Progress, For Review, Completed)
    6.3. The system must be able to display task cards.
        6.3.1. Users must be able to create, edit or delete existing task cards.
        6.3.2. Users must be able to set/edit a deadline for a task.
        6.3.3. Users must be able to add and edit the description of a task.
        6.3.4. Users must be able to comment on task cards.
        6.3.5. Users must be able to flag a task as high priority.
        6.3.6. Users must be able to drag and drop tasks between different columns to update workflow progress.

4.2 Non-Functional Requirements

Performance

- When the user uses task-based functionalities, changes must be reflected within at least 1 minute.

Reliability

- The system should not crash more than thrice daily.

Security

- The system should prevent unauthorized personnel from accessing user data.
- The system should only allow registered users to view their account information.

Scalability

- The website must be able to support 10 active users while meeting all real-time requirements.
- The website must be able to support at least 20 tasks on a board while meeting all real-time requirements.

Usability

- Features on the website must be responsive within 3 seconds of being clicked.

4.3 Data Dictionary

Term	Definition
Kanban board	A project management tool which is the main feature of our website. Kanban boards visually depict work at various stages of a process using cards to represent work items and columns to represent each stage of the process.
Column	Vertical division of a Kanban board that allows users to visualize different stages of workflow.
Task Card	Digital cards to represent a task in the project.
Login Page	The page where users can either register, login or access the Forget Password page.
Project List Page	The page where users are directed to after a successful login. The User can view their projects or create a new project here.
Kanban View Page	The main page of a project. The main functionalities of the Kanban-board will be performed here.