Use Case Diagrams and Traceability Matrix for the Roommate Finder project

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Traceability Matrix for the Roommate Finder

Functional Requirement	User Story ID	User Case ID	Description	Test Case ID
User Login/Registration	US01, US02	UC01	Allows users to create an account and login.	TC01
Search/Browse and Filter for people	US03, US04	UC02	Users can search for people or filter based on preferences and similarities	TC02
Blocking and reporting users	US05, US09	UC03	Users can block and unblock other users. Users can report other users.	TC03
Account settings	US06, US08	UC04	Users can set a description/bio for themselves and users can add/remove a photo to their account.	TC04
Messaging	US07	UC05	Users can direct/private message other users.	TC05
Adding Friends	US10	UC06	Users can add and un-add friends.	TC06

User Story ID: US01

As a user, I want to register for an account so that I can create a profile to begin looking for potential roommates.

Scenario: User registers account successfully

- Given user is on sign-up/registration page

- When valid registration information is entered (email, name, password, etc.)

- Then the account is created/registered and redirected to the login page.

Scenario: Unsuccessful User Registration

- Given user is on sign-up/registration page

- When they leave requirement fields empty

- Then they receive an error message that all fields must be filled out/completed

User Story ID: US02

As a registered user, I want to log into my account so that I can access my profile and features within the app.

Scenario: Successful account login

- Given user is signed up and is on login page

- When they enter correct login information

- Then they are logged into their account and redirected to the home screen.

Scenario: Unsuccessful Login

- Given the user is on the login page.

- When they enter incorrect login information

- Then they are shown an error login information incorrect

- And gets asked to try again

Scenario: Ask for password reset

- Given the user is on login page.

- When they click "Forgot Password"

- Then they are asked their email address so they can receive password reset information

- And they can login with their new password

User Story ID: US03

As a user, I want to be able to search for specific dorms, because I want to get an accurate viewing of other people looking to find a roommate.

Feature: Search Bar

Scenario: User enters a valid dorm name

- Given a user is registered and logged in

- The user clicks on the search bar

- When the user types in a valid dorm name

- Then users planning to and living in the dorm are now shown in the browsing section

Scenario: Invalid dorm/apartment nt name

- Given the user is registered and logged in

- The user clicks on the search bar

- When user enters in invalid apartment/dorm name

- Then the user should get a message that says "Dorm/Apartment does not exist"

User Story ID: US04

As a user, I want to be able to filter my search, because I want the searching process to be accurate to my wants and needs from a roommate.

Feature: While searching can filter search with tags for specific users

Scenario: Users exist with given filters

- Given the user is registered, and logged in, browsing users

- When the user clicks on the search bar

- Then a separate filter button will show up

- When the user clicks filter button the user chooses how to filter users based on tags given to accounts

- And then user hits the "search" button

- Then the search shows only the accounts that were not filtered out

Scenario: No users exist with given filters

- Given the user is registered and logged in

- And user clicks the search bar

- And user clicks the filter option

- When the user enters filtered tags and hits search

- Then the user should get the message "No users exist for this search"

User Story ID: US05

As a user I want to be able to block other users from adding or messaging me, because I want to be able to filter people whom I do not to interact with

Scenario: Blocking a user

- Given the user is registered, logged in, and the other user is also registered

- And the user can click on another user's account

- And there exists a block button for the user to click

- When the user clicks the block button

- Then the user should not receive any friend requests or messages from the other user

- When other user attempt to message user

- Then the blocked user gets the message "This user has blocked you"

Scenario: Unblocking another user

- Given the user is registered, and other user is registered and blocked

- The user clicks on the blocked user's account

- When the user sees the unblock button in place of the block button

- And when the user hits the unblock button

- Then the other user is unblocked and is able to add as friend and message the user.

User Story ID: US06

As a user I would like to tag a description to my account so people can learn more about me and decide whether to pick me as a roommate or not

Feature: tagging a description

Scenario: Adding a description

- Given that I have signed up for an account and want to find a roommate

- When I go to add details to my account

- Then I will insert a description about me and my interests for others to see when viewing my account

Feature: Viewing other people's descriptions

Scenario: Seeing other people's descriptions

- Given that I am a user looking for a roommate using this application I will look at other profiles

- When I see someone else's account and view their description

- Then I should be able to decide if their interests align with mine

- And I will either add them as a friend or look for another roommate

User Story ID: US07

As a user, I would like to privately message a potential roommate so I can communicate my interests with them

Feature: Private messaging

Scenario: I find a roommate I matched with and want to message them

- Given that I am using the roommate finder app

- When I find a roommate I feel would compliment my personal interests

- Then I will message him using the private messaging function on the app

Feature: Not allowing people to message users who have blocked them

Scenario: I want to message a user who has me blocked

- Given that I find a user of the app I would like to message

- When I attempt to message that user

- Then I will be greeted with an unsent message and a pop up that says "this user has you blocked"

User Story ID: US08

As a registered user, I want to upload a profile picture so that potential roommates can see me visually.

Feature: Profile Picture

Scenario: Profile picture uploaded successfully.

- Given the user is on the account settings page

- When they upload a valid photo/image file

- Then the image is uploaded and displayed as their profile picture

Scenario: Invalid File Format/File Size

- Given the user is on the account settings page

- When they upload an invalid file format/file size (ex. PDF, DOCX/ 5MB, 1GB)

- They they are given an error message that the photo is invalid format or too large

User Story ID: US09

As a user, I would like to other report other users in case they are using their account inappropriately

Feature: Reporting other users because of the content on their page

Scenario: As a user , I want to report accounts which are breaking the apps rules and regulations

- Given that I am a user and am looking at other potential roommates

- When I see an account that is showing text or pictures which are breaking the apps rules and regulations

- Then I will report the account so an administrator can view the account and deem the account banned or not

Scenario: As a user, I want to report other accounts that sends me messages that break the apps policies

- Given That I am messaging another user

- When I get sent a message which breaks the apps rules and regulations

- Then I will report that message as well as the account for an administrator to deem inappropriate or not

User Story ID: US10

Adding a user as a friend to be roommate with

Feature: Adding other users

Scenario: As a user, I want to add a user who I found compatible, so that I can message them.

- Given I am logged in on the application with my details

- When I look into the users who are compatible with me

- Then I want to be able to add them on the application

- And message them using the message friend feature

Scenario: As a user, I want to add another user but encountered an error message

-Given I am logged in to the application

-When I look at the list of the people compatible with me

-And I click on their profile page

-When I try to add them, an error message should be shown on the application

-And the user should not be added to my friends list

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Use Cases Descriptions:

User Registration and Login: UC01

Use Case: User Login and Account Creation

- **Actors:** User, System

- **Preconditions:** User is connected to internet, user is accessing the roommate finder application

- **Main Flow:**

    a) User accesses the login page of application

    b) User is either registering as a new user or logging in as an existing user

    c) If registering as a new user, the user will enter account information such as name, username, password, email, etc.

    d) System verifies the information and creates the new user account

    e) If the user is logging in the user will enter the credentials of a username and password.

    f) System verifies credentials and will proceed to the home page if successful.

- **Alternative Flow:**

    - Invalid credentials while registering or logging will result in a pop up message displaying the credentials are invalid.

- **Postconditions:** User should be able to access the home profile page for registered users and be able to browse user.

Search, Browse, and Filter Users: UC02

Use Case: Search, Browse, and Filter Users

- **Actors:** Users, System
- **Preconditions:** User is registered and logged into their account and is currently browsing other users
- **Main Flow:**

  a) User is able to browse users after logging in

  b) User clicks the search bar

  c) Users can apply specific tag/User descriptions to apply to search or can search for specific apartments or dorms.

  d) User then confirms search

  e) The system should show users that fit within the user's search results

- **Alternative Flow:**

  - If no users exist with current filters there should be a message saying that, "No users exist with current filters".

- If a user enters invalid dorm/apartment name the user will receive a message of,

  "Dorm or apartment does not exist" and should show an empty page.

- **Postconditions:** Users can now view a users that match the search and filters

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Blocking and Reporting Users: UC03

Use Case: Blocking and Reporting Users

- **Actors: Users, System**
- **Preconditions: A registered User does not want to interact with another registered user and believes the other user is inappropriate**
- **Main Flow:**

  a) User A does not want to interact with user B

  b) User A can choose to block user B by pressing on a block button while viewing user B's profile

  c) User B can no longer message user A and will receive a message saying, "User has blocked you"

  d) User A can also report user B with a report button allowing the user to enter users details and descriptions of the incident if they believe user B was acting inappropriate

  e) Report is sent to the system where the administration can view reports.

f) User A can remove the block by clicking the same button to unblock user

- **Alternative Flow:**

  - User can enter incorrect user information when reporting and will receive the message, "User does not exist", and will be prompted to enter the correct user information for the report

- **Postconditions:** Users can decide who they want and don't want to interact with, the feature will help users choose who they associate with/

Account Settings : UC04

Use Case: Account Settings

- **Actors:** Users, System
- **Preconditions:** User is registered and logged in and is at home page browsing roommates
- **Main Flow:**

  a) User will click the profile button

  b) There the user can see their profile picture, description, and settings

  c) User can modify their settings, profile picture, and account biography

  d) User will be prompted to confirm all changes to account

e) Once confirmed the system will update account information to be viewable by other users.

- **Alternative Flow:**

    - User does not confirm changes, then changes should be reverted to before any changes were made.

- **Postconditions:** Users can alter their profiles to accurately represent themselves and personalize their settings for better user experience.

Messaging Users: UC05

Use Case: Messaging Users

- **Actors:** Users, System
- **Preconditions:** Both users are registered and logged in, and have not blocked each other
- **Main Flow:**

    a) User A clicks on User B's profile and adds them as a friend

    b) User A has the option to send a private message and clicks it

    c) Message window opens where User A can type a message

    d) User A sends the message

    e) System delivers the message to User B

- **Alternative Flow:**

    - If User A has been blocked by User B, the system will display an error message "Message error"

    - If User B has deleted their account, User A will not be able to find the user.

- **Postconditions:**

    - User B sees the message in their inbox and can reply if they wish to do so.

Adding Friends: UC06

Use Case: Adding a user as a friend

- **Actors:** User, System
- **Preconditions:** Both users have are logged and do not have each other blocked
- **Main Flow:**

    a) User A has looked at user B's profile and decides he wants to be friends with them

    b) User A will see an "Add Friend" message next to User B's name

    c) Once he clicks the "Add Friend" button, User B will receive a friend request

    d) Once User B views User A's friend request, he can decide if he wants to press "Accept" or "Deny" on User À's friend request

- **Alternative Flow:**

  - **User B has User A blocked and cannot send them a friend request**

- **Postconditions:**

  a. **User A and User B will begin messaging each other to determine if they are interested in becoming roommates**

These uses cases allow for a fully structured and detailed description of how users will be able to use the program and interact with one another in the roommate finder program. Each use case includes the actors, preconditions, main flow, alternative flows and postconditions in order to have a structured and complete program.

User Management

-isUserBanned = bool
-isUserRegistered = bool

+userLogin()
+userRegistration()
+reportUser()
+isUserAdmin()

User Login/Registration

- userid: string
- password: string
- loginStatus: string

+ verify Login(): bool

User Profile

-userName = string
-userID = int
-userDescription = string
-userLocation = string
-moveInDate() = string
-userProfilePicture = bool

+updateProfile()

System

+inputData()
+outputData()

Adding Friend

-friendID = int
-friendName = string

+addFriend()
+userMessage()
+isUserBlocked()

User Search

-

+searchFilter()
+showProfiles()

Administrator

-adminName = string
-adminID = int

+adminPermission() = bool
+updateUserPermissions()

Blocking and reporting users

- blockedUserName: string
- unblockedUserName: string
- reportUser: string

+blockUser()
+unblockUser()
+reportUser()
+