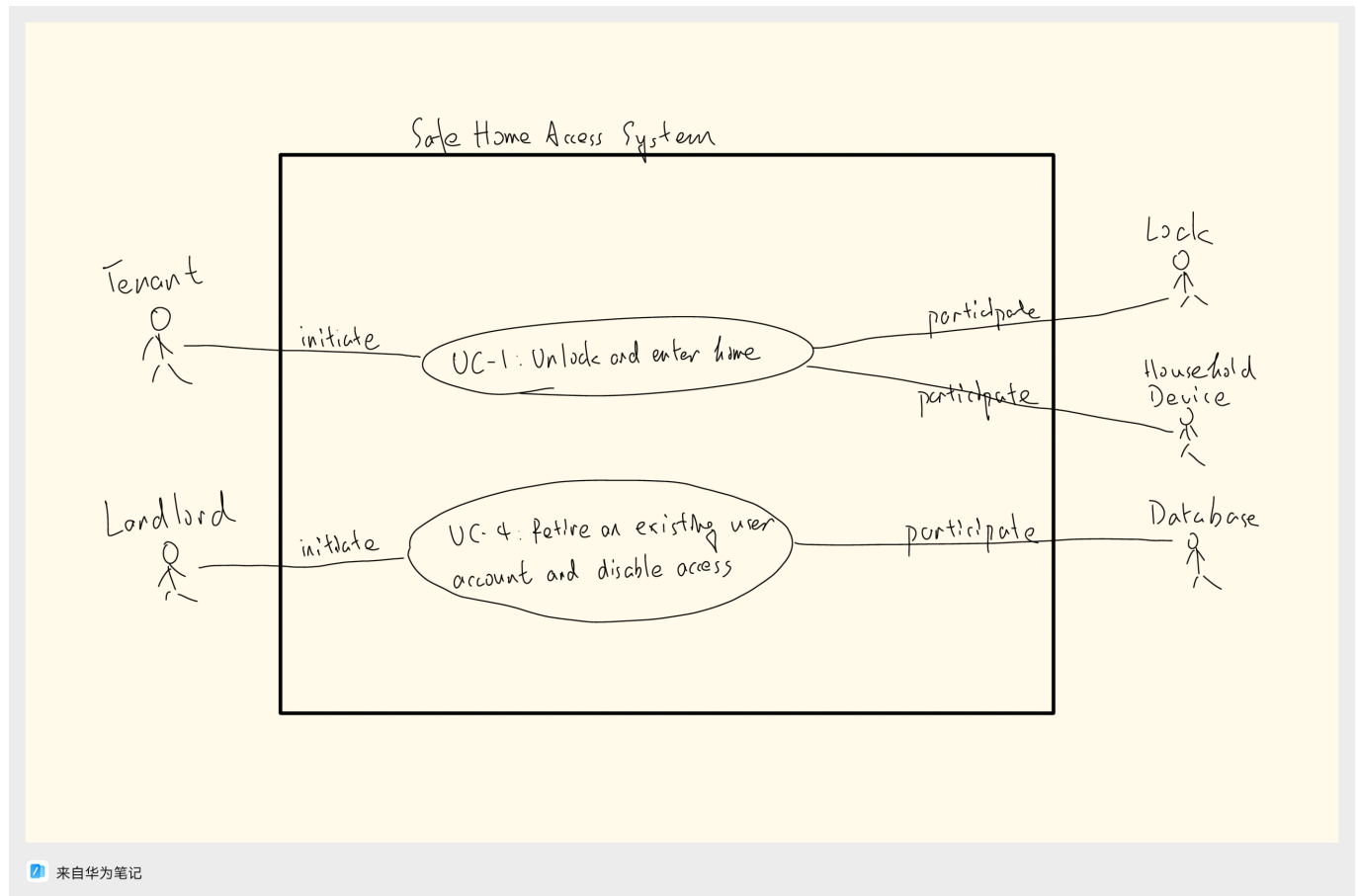


Course Assignment (Mini Project I-1)

Draw use case diagram for UC-1 (Unlock) and UC-4 (RetireUser)



Write the use case schemas of UC-1 and UC-4

Use Case UC-1: Unlock and Enter Home

Name / Identifier: Unlock (UC-1)

Related Requirements:

- REQ-1: Doors by default will be locked.
- REQ-2: Unlock the doors using a mobile phone.
- REQ-3: The system will block when it detects multiple lock-phone pairing failures.
- REQ-4: The doors will be automatically locked at all times. Initiating Actor: Tenant

Actor's Goal: To unlock the home's door and enter.

Participating Actors: Lock, Household Devices, Database

Preconditions:

- Doors are locked.
- Tenant has the mobile application installed with proper - permissions.

Postconditions:

- Door is unlocked.
- Entry log is saved in the database.

Flow of Events for Main Success Scenario:

- > 1. Tenant sends unlock command via mobile application.
- <- 2. System validates the request by checking the mobile device's authorization in the database.
- <- 3. System sends a command to the lock to unlock.
- <- 4. System logs the entry in the database and confirms to the Tenant.

Flow of Events for Extensions (Alternate Scenarios):

- > 1a. Tenant sends unlock command with an unauthorized device.
- <- 2a. System denies access and logs the unauthorized attempt in the database.
- > 1b. Tenant sends multiple unsuccessful unlock attempts.
- <- 2b. System blocks the mobile device temporarily and alerts the Tenant.

Use Case UC-4: Retire an Existing User Account**Name / Identifier: RetireUser (UC-4)****Related Requirements:**

- REQ-7: Manage additional user accounts.

Initiating Actor: Landlord**Actor's Goal: To retire an existing user account and disable its access.****Participating Actors: Database****Preconditions:**

- User account exists in the database.

Postconditions:

- User account is retired.
- The mobile device associated with the user cannot access the lock.

Flow of Events for Main Success Scenario:

- > 1. Landlord selects a user account to retire.

- <- 2. System validates the request and checks if the user account exists.
- <- 3. System retires the user account and updates the database.
- <- 4. System confirms the action to the Landlord.

Flow of Events for Extensions (Alternate Scenarios):

- > 1a. Landlord tries to retire a non-existent user account.
- <- 2a. System returns an error message stating that the user account doesn't exist.

These schemas should give a comprehensive breakdown of the interactions between the system and the actors for these specific use cases.

Write the acceptance tests for UC-1 and UC-4

Acceptance Test for UC-1: Unlock and Enter Home

Test-case Identifier: TC-1-1

Use Case Tested: UC-1, main success scenario
Pass/fail Criteria: The test passes if the Tenant successfully unlocks the door via the mobile application within the allowable attempts.
Input Data: Mobile device identifier, user credentials

Test Procedure:	Expected Result:
Step 1. Use an unauthorized mobile device to send unlock command.	System denies access; records unauthorized attempt in the database; sends notification to Tenant's authorized mobile device.
Step 2. Send multiple unsuccessful unlock attempts.	After a defined number of attempts, system blocks the mobile device temporarily and alerts the Tenant.
Step 3. Use an authorized mobile device with proper credentials to send unlock command.	System unlocks the door; records the entry in the database; sends a success notification to Tenant's mobile device.

Acceptance Test for UC-4: Retire an Existing User Account

Test-case Identifier: TC-1-2

Use Case Tested: UC-4, main success scenario
Pass/fail Criteria: The test passes if the Landlord can retire an existing user account and disable its access, and if the retired user cannot unlock the door afterward.
Input Data: User account details (e.g., username, mobile device identifier)

Test Procedure:	Expected Result:
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Test Procedure:	Expected Result:
Step 1. Select a non-existent user account to retire.	System returns an error message stating the user account doesn't exist.
Step 2. Select an existing user account to retire.	System retires the user account and confirms the action to the Landlord.
Step 3. Use the mobile device associated with the retired user to send unlock command.	System denies access; records unauthorized attempt in the database; sends notification to Tenant or Landlord about the denied access.