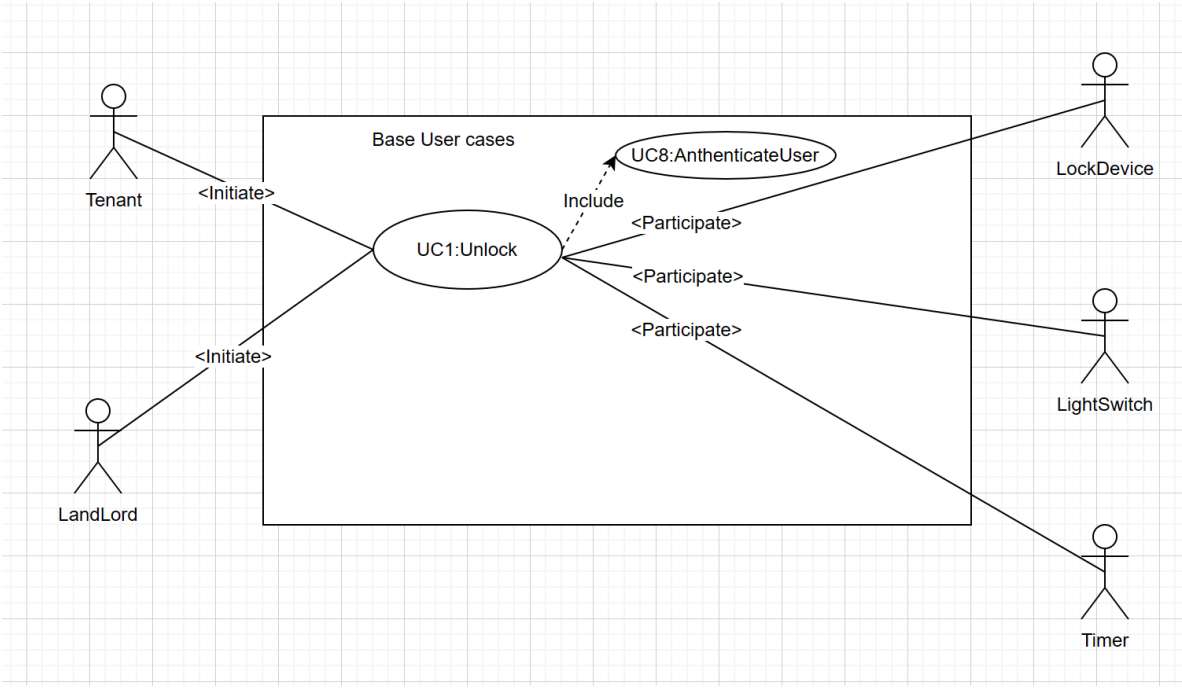
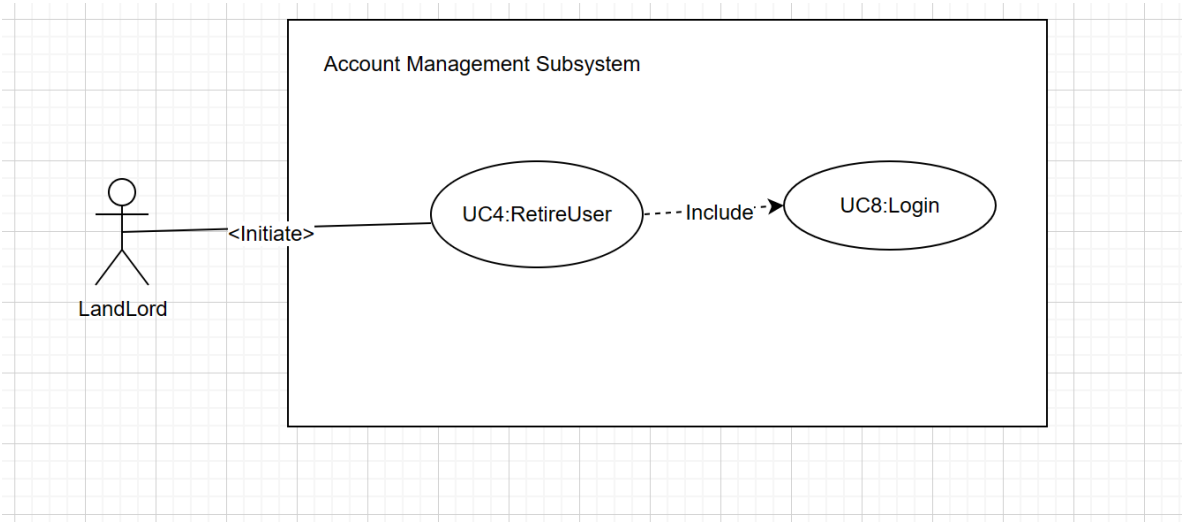
任务1、case diagram for UC-1 (Unlock) and UC-4 (RetireUser)

UC-1:



UC-4



任务2：Write the use case schemas of UC-1 and UC-4

UC-1

Use Case UC-1:		**Unlock**
Related Requirements:		REQ1, REQ2,REQ3, REQ4, and REQ5 stated in the table of REQs
Initiating Actor:		Any of: Tenant, Landlord
Actor's Goal:		To disarm the lock and enter, and get space lighted up automatically.
Participating Actors :		LockDevice, LightSwitch, Timer
Preconditions:		• The set of valid information stored in the system database is non-empty. • user's phone with the Bluetooth network on • user's phone is within detectable range
Postconditions:		The auto-lock timer has started countdown from autoLockInterval.
Flow of Events for Main Success Scenario:		
→	1.	**Tenant/Landlord** arrives at the door and hold the phone close to the door lock with the Bluetooth network on
	2.	include:: *AuthenticateUser* (UC-7)
←	3.	**System** (a) signals to the **Tenant/Landlord** the lock status, e.g., "disarmed," (b) signals to **LockDevice** to disarm the l ock, and (c) signals to **LightSwitch** to turn the light on
←	4.	**System** signals to the **Timer** to start the auto-lock timer countdown
→	5.	**Tenant/Landlord** opens the door, enters the home [and shuts the door and locks]

Subroutine «include» Use Case:

Use Case UC-7:			**AuthenticateUser** (sub-use case)
Related Requirements:			REQ3, REQ4 stated in the table of REQs
Initiating Actor:			Any of: Tenant, Landlord
Actor's Goal:			To be positively identified by the system (at the door interface).
Participating Actors:			AlarmBell, Police
Preconditions:			• The set of valid keys stored in the system database is non-empty. • The counter of authentication attempts equals zero.
Postconditions:			None worth mentioning.
Flow of Events for Main Success Scenario:			
←	1.		**System** prompts the actor for identification, e.g., alphanumeric key
→	2.		**Tenant/Landlord** supplies a valid identification key
←	3.		**System** (a) verifies that the key is valid, and (b) signals to the actor the key validity
Flow of Events for Extensions (Alternate Scenarios):			
2a. **Tenant/Landlord** enters an invalid identification key			
←	1.		**System** (a) detects error, (b) marks a failed attempt, and (c) signals to the actor
←		1.a	**System** (a) detects that the count of failed attempts exceeds the maximum allowed number, (b) signals to sound **AlarmBell**, and (c) notifies the **Police** actor of a possible break-in
→	2.		**Tenant/Landlord** supplies a valid identification key
	3.		Same as in Step 3 above

UC-4

Use Case UC-4:		RetireUser
Related Requirements:		REQ1,REQ2,REQ3,REQ7 stated in the table of REQs
Initiating Actor:		Any of: Landlord
Actor's Goal:		Retire an existing user account and disable access.
Participating Actors :		Database, Landlord
Preconditions:		• Landlord is accessible to database, the user account is stored in the database
Postconditions:		Refresh and save database
Flow of Events for Main Success Scenario:		
➡	1.	**Landlord clicks the hyperlink "RetireUser"**
⬅	2.	System prompts for the search criteria
➡	3.	**Landlord specifies the search criteria and submits**
⬅	4.	**System prepares a database query that best matches the actor's search criteria and retrieves the records from the Database**
➡	5	**Database returns the matching records**
➡	6	**Landlord check the user information and click "Delete"**
⬅	7	**System (a)update this modification to the database (b)signals completion**

任务3：Write the acceptance tests for UC-1 and UC-4

UC-1

Test-case Identifier:	**TC-1**
Use Case Tested:	UC-1, main success scenario, and UC-7
Pass/fail Criteria:	The test passes if the user enters a key that is contained in the database, with less than a maximum allowed number of unsuccessful attempts
Input Data:	Bluetooth signal, door identifier
Test Procedure:	**Expected Result:**
Step 1. Turn on Bluetooth on an unauthorized user's phone and approach the door lock	System beeps to indicate failure;records unsuccessful attempt in the database;prompts the user to try again
Step 2. Turn on the Bluetooth on the authorized user's phone and approach the door lock	System flashes a green light to indicate success;records successful access in the database;disarms the lock device

UC-4

Test-case Identifier:	**TC-4**
Use Case Tested:	UC-4
Pass/fail Criteria:	The test passes if the landlord retire the user and then the user can not unlock the door
Input Data:	Bluetooth signal, user identifier
Test Procedure:	**Expected Result:**
Step 1. Turn on Bluetooth on an authorized user's phone and approach the door lock	System flashes a green light to indicate success;records successful access in the database;disarms the lock device
Step 2. retire the aunthorized user above and use his/her pthone to unlock the door	System beeps to indicate failure;records unsuccessful attempt in the database;prompts the user to try again