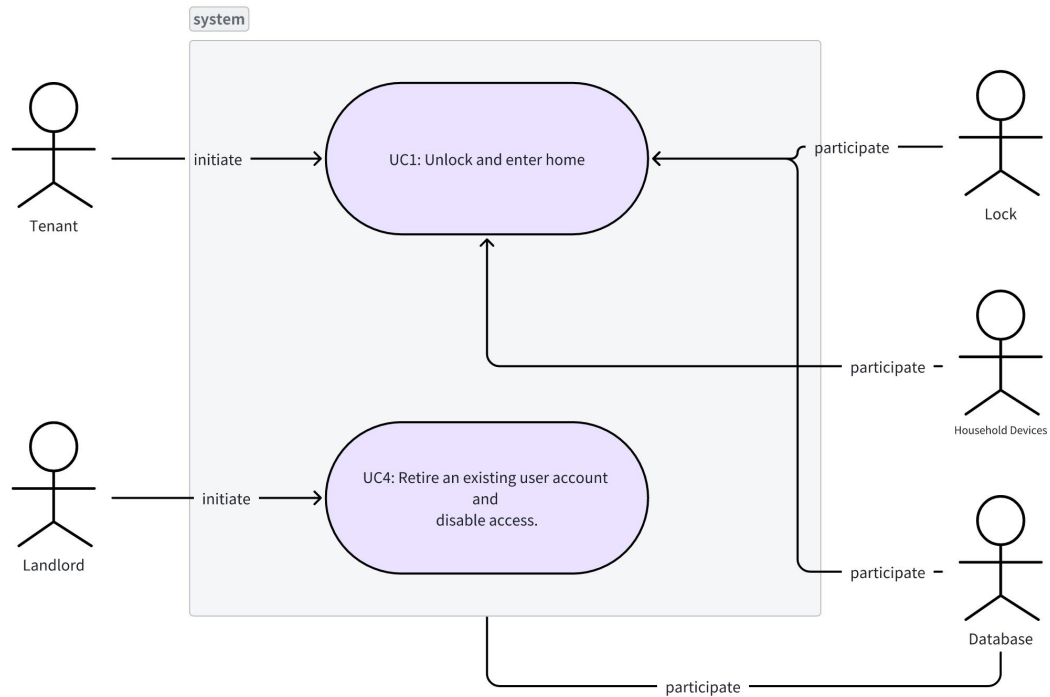


## 一、 Use Case Diagram



## 二、 use case schemas

<b>Use Case UC-1:</b>	<b>Unlock</b>
<b>Related Requirements:</b>	REQ1, REQ2, REQ3 And REQ4
<b>Initiating Actor:</b>	Tenant
<b>Actor's Goal:</b>	To disarm the lock and enter, and get space lighted up automatically.
<b>Participating Actors:</b>	Lock, Household Devices, Database, Landlord
<b>Preconditions:</b>	The set of phone machine code stored in the system database is non-empty.
	The system displays the menu of available functions; at the door keypad the menu choices are "Lock" and "Unlock."
<b>Postconditions:</b>	The auto-lock timer has started countdown from autoLockInterval.
<b>Flow of Events for Main Success Scenario:</b>	

-->1.	Tenant send the unlock command from his phone
<--2.	System compares the phone with the database to check whether the phone is authorized(authorized success). System signals to the Tenant the lock status, e.g., "disarmed," , System signals to Lock to disarm the lock, and System signals to Household Devices open the set of open devices.
-->3.	System signals to the Timer to start the auto-lock timer countdown
<--4.	Tenant opens the door, enters the home [and shuts the door and locks], System record the devices that enter the room and send a confirmation message to the Tenant/Landlord
<b>Flow of Events for Extensions (Alternate Scenarios):</b>	
-->1.	Tenant (Not authorized) send the unlock command from his phone
<--2.	System compares the phone with the database to check whether the phone is authorized(authorized fail). System signals to the Tenant Unlocking failure, and record the devices that try to enter the room and send a confirmation message to the Tenant/Landlord
-->3.	Tenant send multiple unlock commands from his phone
<--4.	System blocks the phone temporarily and alerts the Tenant/Landlord.

<b>Use Case UC-4:</b>	<b>RetireUser</b>
<b>Related Requirem'ts:</b>	REQ7
<b>Initiating Actor:</b>	Landlord
<b>Actor's Goal:</b>	Remove an authorized account
<b>Participating Actors:</b>	Tennant
<b>Preconditions:</b>	The target user exists in the database
<b>Postconditions:</b>	Target user can not unlock the door
<b>Flow of Events for Main Success Scenario:</b>	
-->1.	Landlord selects a user for retirement on the administrator interface
<--2.	System verifies administrator permissions, retires the user account, updates the database and sends information to Landlord.

### 三、 acceptance tests

<b>Test-case Identifier:</b>	TC-1
<b>Use Case Tested:</b>	UC-1, main success scenario
<b>Pass/fail Criteria:</b>	The test passes if the user's mobile device matches the database and the number of attempts is less than the maximum number of attempts.
<b>Input Data:</b>	mobile device bluetooth network identifier
<b>Test Procedure:</b>	<b>Expected Result:</b>
Step 1. Use an unauthorized mobile device to send unlock command.	System denies access; records unauthorized attempt in the database; sends message to Tenant's mobile device and Landlord's mobile device.
Step 2. Send multiple unauthorized unlock commands	When System exceed the maximum number of attempts, system blocks the mobile device temporarily and alerts the Tenant and Landlord.
Step 3. Use an authorized mobile device to send unlock command.	System unlocks the door; records the entry in the database; sends a success notification to Tenant's mobile device and Landlord's mobile device.

<b>Test-case Identifier:</b>	TC-4
<b>Use Case Tested:</b>	UC-4, main success scenario
<b>Pass/fail Criteria:</b>	The test passes if the Landlord can delete an authorized user, and the user can not unlock the door afterword
<b>Input Data:</b>	Landlord's mobile device identifier,the target tenant's account
<b>Test Procedure:</b>	<b>Expected Result:</b>
Step 1. Using a non-host account to try to delete	The system returns an error message indicating no permission
Step 2. Select a non-existent user account to retire.	The system returns an error indicating that the account does not exist
Step 3. Select an existing user account to retire.	System retires the user account and confirms the action to the Landlord.
Step 4. Use the mobile device associated with the retired user to send unlock command.	System denies access; records unauthorized attempt in the database; sends message to Tenant's mobile device and Landlord's mobile device.