**1、Derive UC-1 and UC-4**

|  |  |  |  |
| --- | --- | --- | --- |
| Initiator | Initiator’s goal | Participants | Use Case Name |
| Tenant | Unlock and enter home | Lock, Household Device, Database, Phone | Unlock(UC-1) |
| Landlord | Retire an existing user phone number and disable access. | Database  Phone | Retire User(UC-4) |

**2、Give the use case schemas of UC-1**

|  |  |
| --- | --- |
| Related requirements | REQ-1\3\4\5 |
| Initiating actor | Any of :tenant landlord |
| Actor’s goal | When the guest's mobile phone turns on Bluetooth and approaches the door lock, the door lock opens automatically. And light up the smart devices in the house at the same time |
| Participating actors | Lock device , light switch, timer, Bluetooth, mobile phone |
| Preconditions | The Bluetooth of the mobile phone is bound to the door lock, and automatically recognizes and unlocks when approaching |
| Flow of Events for Main Success Scenario: | |
| 1.Tenant/Landlord arrives at the door and blue teeth find the signal. | |
| 2.System send “success enter” message to the phone of tenant/landlord | |
| 3. The system sends a signal to the timer | |
| 4. System tells timer to start timing | |
| 5. Tenant/Landlord enters the home and close doors | |

**Give the use case schemas of UC-4**

|  |  |
| --- | --- |
| Use Case UC-4: | RetireUser |
| Related Requirements: | REQ-7 |
| Initiating Actor: | Landlord |
| Actor’s Goal: | Retire an existing user account and disable access |
| Participating Actors: | database |
| Preconditions: | The legal information set associated with the user's mobile device stored in the database is not empty  The landlord has a legal account and password to access the database |
| Postconditions: | The legitimate associated information of one or more tenants designated by the landlord is deleted, and the tenant whose information is deleted can no longer enter the room |
| Flow of Events for Main Success Scenario: | |
| 1. The landlord provides the legal access account and password to the database, and enters the database | |
| 2. The landlord provides the tenant ID to the database and queries one or more tenants to be deleted | |
| 3. The database returns the information of these tenants, including the information records associated with the tenant's mobile devices | |
| 4. Landlord selects “Remove ” and delete the chosen ID in the database | |
| 5. System delete the data and send “success delete” to landlord | |

**3、Give the acceptance tests for UC-1**

|  |  |  |
| --- | --- | --- |
| Test-case Identifier | TC-1 | |
| Use Case Tested | UC-1, UC-7 | |
| Pass/fail Criteria | The phone’s ID recognized when approaching door | |
| Input data | Blue tooth’s message to the Lock | |
| Test procedure: | | Expected Result: |
| Step 1: Use a wrong phone’s ID to approach the door | | No response |
| Step 2: Use a correct phone’s ID to approach the door | | Respond with the data in the database and begin to work |

**Give the acceptance tests for UC-4**

|  |  |  |
| --- | --- | --- |
| Test-case Identifier | TC-2 | |
| Use Case Tested | UC-4, | |
| Pass/fail Criteria | No unlock when a phone’s ID was deleted | |
| Test procedure: | | Expected Result: |
| Step 1: landlord has removed a phone’s ID from database | | System delete the data and send “success delete” to landlord |
| Step 2: Approach the door with a phone whose phone’s ID has been deleted | | System No response |