

## Use Case 1: Unlock

### Use Case UC-1: Unlock

Related

Requirements: REQ1, REQ3, REQ4 and REQ5

Requirements:

Initiating Actor: Any of: Tenant, Landlord

Actor's Goal: To disarm the lock and enter, and get space lighted up automatically.

Participating Actors: Lock Device, Light Switch, Timer

Preconditions: • The set of valid keys 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."

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 selects the menu item "Unlock"

2. include :: AuthenticateUser(UC-7)

← 3. System (a) signals to the Tenant/Landlord the lock status, e.g., "disarmed," (b) signals to Lock Device to disarm the lock, and (c) signals to Light Switch to turn the light



←4. System signals to the Timer to start the auto-lock timer countdown

→5. Tenant / Landlord opens the door, enters the home [and shut the door and locks]

Flow of Events for Extensions  
(Alternate Scenarios):

1a. Intruder open the mobile phone and select the menu item "Unlock"

2a. System (a) signals to the Intruder the lock status, eg. "Unlock failed" (b) signals to Lock Device to block





## Acceptance tests

• Test-case Identifier: TC-1

• Use Case Tested: UC-1, main success scenario, and UC-7

• Pass/Fail Criteria: Before success keep the door locked and auto-lock. 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. Maintain a history log of all operations.

• Input Data: Numeric keycode, door identifier.

Test Procedure:

Step 1: Type in an ~~incorrect~~<sup>correct</sup> keycode and a valid ~~keycode~~<sup>door identifier</sup>.

Step 2: Type in the correct keycode and door identifier.

Expected Result:

1. System keeps to indicate failure, records unsuccessful attempt in the database; prompts the user to try again; keep the door locked and auto-lock.

2. System flashes a green light to indicate success, records successful access in the database; disarm the lock device; unlock the door.





Test-case Identifier: TC-4

Use Case Tested: UC-4. main success scenario, and UC5

The test passes if the user that should be removed is successfully removed,

Pass/Fail Criteria: and the user that should not be removed is not removed.

Input Data: Remove command.

Test Procedure:

Step 1: Enter the remove command incorrectly

Step 2: Enter the remove command correctly

Expected Result:

① Shows failure information;

records unsuccessful attempts in the database; prompts the landlord to try again.

② Shows successful information:

records successful attempts in the database.

