# Use Case # [2: Turning off the light as you leave a room]

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| GENERAL CHARACTERISTICS | |
| **Author** | Jordan Persson |
| **Last Update:** | 9/23/2017 |
| **Scope** | Home Automation System |
| **Level** | User-goal |
| **Status** | Incomplete Conceptualization |
| **Primary Actor** | Mobile Application User |
| **Secondary Actors** | Server; Mobile Application |
| **Stakeholders and Interests** | Mobile App User: Wants for their lights to turn off as they leave a room. |
| **Preconditions** | User has Mobile application installed and registered. |
| **Success Post Condition** | The light registered for the room the user just left has turned off. |
| **Failed Post Condition** | The light registered for the room the user just left remains on. |

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| MAIN SUCCESS SCENARIO (or basic flow) | |
| **Step** | **Action -** description in words of each step in success scenario |
| 1 | The user walks out of a room. |
| 2 | The mobile app sends a message to the server telling it what room it has just left. |
| 3 | The server receives the information and finds the light/lights registered for that room. |
| 4 | The server sends a signal to those lights to turn off. |
| 5 | The lights are now off in the old room. |

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| EXTENSIONS or Alternate Flows | |
| **Step** | **Branching Action** |
| *n..m* | \*a At any time the server fails:   1. Server attempt to find and fix issues   1a. Server is offline  1. App informs the user that no server is detected  2. User restarts the server  3. App reconnects to the server    1b. Server crash  1. Server auto restart  1a. Server fails to auto restart  1. Mobile app informs the user after 1 minute of no response from the server  2. User manually restarts server   1. Server requests information from the mobile application and resumes normal functionality   \*b At any time the mobile application fails:  1. Mobile app searches for issue  1a. Mobile app has no network connection  1. App attempts to connect to wifi to restore connection  1a. App fails to connect to wifi  1. The information is stored on the app and queue to send when connection is restored  2. The app informs the user that it has no network connection.  2a. Mobile application crashes  1. Mobile app sends information about the cause of the crash  2. App attempts to auto restart  2a. Fails to auto restart  1. User manually restarts the app  2. App sends information to the server  3. Mobile app sends its information to the server and reestablishes connections based on what the server sends back |
| 3a. No light is found for that room  1. The system makes a note of the missing light and sends it to the mobile app  2. The Mobile app stores this information in order to offer suggestions to the user at a later  time.  4a. Lights fail to turn off  1. Server tries to find error  1a. Light is not connected to the server  1. The server notes the communication error and sends it to the mobile app  2. The mobile app informs the user that the lights are not connected to the server  3. The user connects the light to the system  1b. Light is connected but fails to turn off  1. The server informs the mobile app of the error  2. The mobile app tells the user that the light isn’t functioning  2. The user disconnects and reconnects the light to the system  2. The light is recalibrated and attempts to turn off again.  2a. The light still won’t work with the system  1. The system tell the mobile app the lights may be faulty.  2. The mobile app tells the user that the lights may need to be replaced  3. User replaces the lights, disconnects the old lights and connects the new ones to the system |
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| SPECIAL REQUIREMENTS | |
| **Req Num** | **Requirement** |
| *n* | 1. Light connections restricted to users 2. Server communications require authentication 3. Server communication allowed outside of the local network |

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| TECHNOLOGY AND DATA VARIATIONS LIST | |
| **Var Num** | **Variation** |
| *n* | 2a. Communications are done over a wireless network so server would need internet and mobile device would need mobile data or be connected to wifi  2b. Keyboard is required to restart server as admin passwords would be needed  4a. Lights must be connected to the server or have a switch connected to the server |

***FREQUENCY OF OCCURRENCE***: Often. It would occur as often as the user changes rooms

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| OTHER ISSUES | |
| **Issue Num** | **Issue** |
| *n* | 1. How will be approach device authentication? 2. How will the light’s information be stored? 3. Should there be dead times to prevent accidentally turning on the lights when they wouldn’t be needed? |