# Use Case # [Turning on light bulb by entering a room]

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| GENERAL CHARACTERISTICS | |
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| **Last Update:** | 9/25/2017 |
| **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 a light source in room to be turned on upon entering the room |
| **Preconditions** | User has Mobile application installed and registered.  Light source in room to be entered is not currently on |
| **Success Post Condition** | The light source is turned on upon entering the room. |
| **Failed Post Condition** | The light source in room that user has entered is not turned 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 into a new room that has no connected light source currently on |
| 2 | The mobile app sends a message to the server telling it what room it has entered. |
| 3  4 | The server receives the information and determines which light source to turn on.  The server turns on the specific light source for that 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 |
|  | 1A. Light source is manually turned on through app before entering room   1. Server determines that light source is already on by app manual override 2. No changes are made to light source’s status   1B. Light source is manually turned on through Amazon Dash button   1. Server determines that light source was manually turned on by Amazon Dash button override 2. No changes are made to light source’s status   1C. Multiple light sources are to be turned on when user enters room   1. User enters a specific room that contains multiple light sources 2. Upon entering, the app communicates with the central server 3. Server determines which light sources are in the room 4. Server turns on all light sources that are contained in the room |
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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 |

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

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| OTHER ISSUES | |
| **Issue Num**  **1.**  **2.**  **3.** | **Issue**  If light is turned on by one process, should it be turned off by the same process?  Are Users limited to only one connected light source per room?  If Users can have multiple light sources per room, can only one light source be turned on by entering the room? |