**Use Case # [6: turn light on/off and control brightness]**

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| ***GENERAL CHARACTERISTICS*** | |
| **Author** | John Clarke |
| **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 to modify the brightness of the light source of current room |
| **Preconditions** | User has Mobile application installed and registered.  User has app installed and a controllable light source |
| **Success Post Condition** | The User can turn on or off a light and vary the brightness. |
| **Failed Post Condition** | The light source does not turn on if app has light setting at level greater than zero or light is still on when app has light setting at zero or brightness does not visibly changed when app changes brightness setting |

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| ***MAIN SUCCESS SCENARIO (or basic flow)*** | |
| **Step**  **1**  **2**  **3**  **4** | **Action -** description in words of each step in success scenario  User has app open  User goes to light setting for specific light source  User manipulates the light intensity setting  Light is off if light intensity setting is at zero or light is on if light setting is greater than zero or intensity of light source has changed relative to the change in the light source intensity setting |

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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 |
|  | 2A. Desired light source is not listed on app   1. Administrator adds light source to list of controllable light sources   4A. Brightness does not change when intensity setting is manipulated   1. User checks that light is capable of adjusting brightness 2. Administrator removes and re-adds light source to list |
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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  5A. Light source must be capable of adjusting brightness |

***FREQUENCY OF OCCURRENCE***: Common but not necessarily often

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| ***OTHER ISSUES*** | |
| **Issue Num**  **1.**  **2.** | **Issue**  Do all connected lights have to be able have their brightness adjusted? What type of light source allows this?  If some light sources aren’t required to be able to adjust their light source, how are they treated separately from the adjustable light sources by the server? |