# Requirements Documentation

# Smart House Project

Revision History

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| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| 10/09/2015 | 0.1 | Description of demands from stakeholder | Jabir Al Fatah,  Liaquath Hassan |
| 23/09/2015 | 0.2 | Description of demands from stakeholder | Jabir Al Fatah,  Liaquath Hassan |
| 17/10/2015 | 0.3 | Description of demands from stakeholder | Liaquath Hassan |
| 8/11/2015 | 0.4 | Description of demands from stakeholder | Liaquath Hassan |
| 25/11/2015 | 0.5 | Description of demands from stakeholder | Liaquath Hassan |

Requirements List

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| **Requirement Name** | **Priority** | **Progress** |
| R1. Connect microprocessor with the smart house devices.  R1.1: Connect Arduino with smart house through corresponding ports and pins. | Essential | 2 devices have been connected and tested. In working condition. |
| R2. Set up connection between microprocessor and server.  R2.1: Get access to the database using URI calls and update device status in micro-controller. | Essential | Partially done |
| R3. Update device status according to database by frequently accessing device ports. | Essential | Partially done |
| R4. Implement Firmata library to communicate with processing sketch. | Essential | Not done |

Requirements Descriptions

### R1

In order for serial communication, the Arduino have to be connected with the smart house devices.

**R.1.1**: For sending and receiving information from the corresponding device, the Arduino pins will be initialized with the correct ports in the smart house. In this way the communication between microprocessor and devices is set up.

### R2

We need to update the device status concurrently so that the user gets recent update about each component.

**R2.1**: For communicating with database, we use URI calls. By this way, we check the server database, which has been updated by users’ command.

### R3

The program will match the database information with micro-controller’s list of devices. It will frequently communicate and match with the device status so that users get correct status of devices.

**R4**

Firmata library implementes the Firmata protocol to communicate with the software on the host computer, in our case the processing. It allows to communicate with the arduino without creating own protocol for every signal change. It will make communication easier by setting up all the logical operations inside the processing sketch.

References:

[1]. <https://www.arduino.cc/en/Reference/Firmata> (Available on 25/11/2015).