EMSS Week 5

NON-FUNCTIONAL REQUIREMENTS

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Architecture Pattern: Model-View-Controller Pattern

Pros:

1. Each plate is independent, allowing changes instead of recompiling the entire system, which makes software development easier and lower cost.
2. Allows users to use a variety of different styles of view to access the same server.
3. Maintainability: Separating the view layer and the business layer also makes WEB applications easier to maintain and modify.

Cons:

1. Increasing the complexity of the system architecture and implementation, so that the system development becomes more difficult.
2. The view and the controller is too close to connection.
3. The data will be accessed multiple times, causing low efficiency.

NFRs	Notion	Description
Portability	Phone application	User shall be able to access the system by using smart phone app. This app shall work the same on both Android and IOS system (just like the BOA app).
	Web application	The system shall be accessible through a website as well. User shall be able to access the system using a smart phone, laptop, computer or any devices that can connect to the internet.
Installability	Plug and play (Wi-Fi)	When a device is plugged into the plug seat, it shall be able to send a broadcast message notifying the system that it is available to receive remote control. The availability information shall be reserved in the device DB.
Performance	Real time status	Once the system receives commands from the user to change the status of the device or source of power, the system shall execute the commands in 10ms. Also, it shall read the successful change in 10ms and send the change notification to the user in 10ms.

		(Note: The exact time should be calculated based on timing analysis.)
Supportability	Documentation	EMSS shall provide the user with all required documentation related to the system which will help user to understand the entire functionality of it, help user to maintain the system in good condition. System shall provide required instructions in case of minor errors or issues.
Scalability	Easy to add/remove devices	The user shall specify the app and/or web controlled devices by making selections from the list of system linked devices
Reliability	Manual control in case of failure	The user shall be able to manually turn on/off devices when the system fails. The user shall be able to manually switch the power supply by press the power-supply-button on the wall. The power supply to the house shall not be interrupted in times of system failure.
Priority	Manual operation VS remote control	If the remote-control command conflicts with the manual operation, then the system shall execute the manual operation.
Security	Password protected	Each house shall have only one account. The accounts are defined by the address. The users shall set the account using email verification. When the user attempts to access the system, he shall log in his account first. In case the user forgets the password or the username, he shall be able to find it by the linked email. Each time when the account is logged in, the exact login time shall be sent to the user by email.
	Limited Wi-Fi range	The system and its link to the devices shall only be available by the support of Wi-Fi. If the user disconnects Wi-Fi or the

		appliances' location is over the Wi-Fi range of the house, then the system and the link shall fail.
Maintenance	Battery life status	The system shall alert the user about the overall life of the battery and automatically request replacement when nearing end of life.
Usability	Easy to use	The system shall be easy to understand and it shall be easy to learn about the functionality and usage. Data displayed to the user shall be easy to red format. It shall not take much time to navigate through the system.