Requirement Specification:

Project Name: IoT Door Lock System.

User's Perspective:

1. The lock system has a virtual user interface created by Blynk from which the user can open or close the door using an android device and internet connection. The button will change with the action of the user and the user must align the door before locking the door.

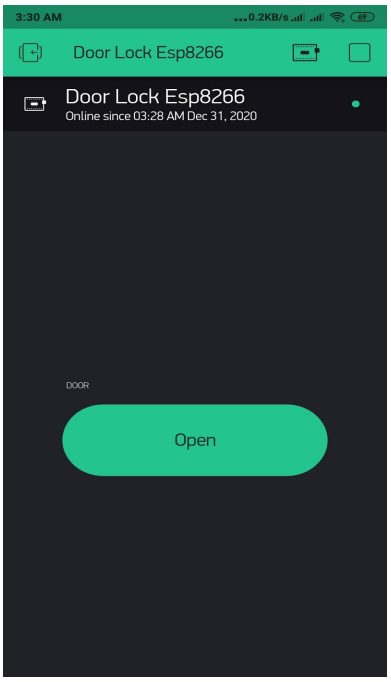

Fig 1.1: Button when the door is closed.

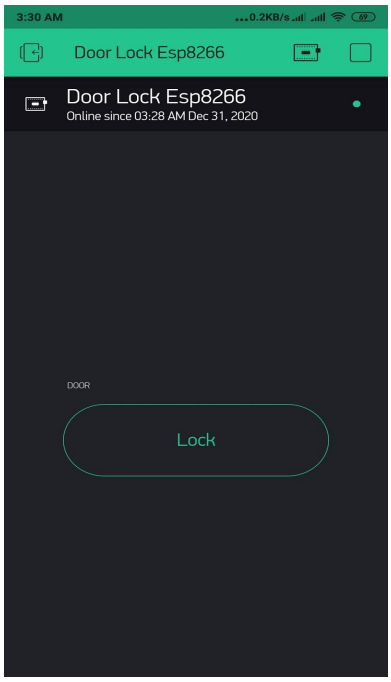

Fig 1.1: Button when the door is opened

2. The lock system also has a physical push button which allows the user to open and close the door in case of emergency or when internet connection is compromised.

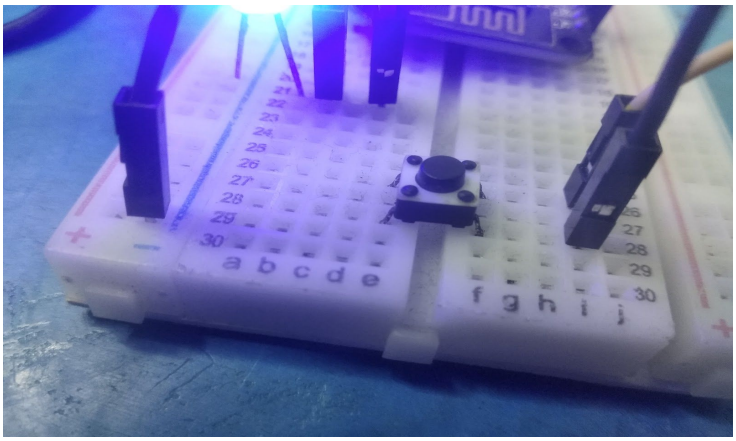

Fig 2.1: Physical Push Button to open and close the door.

Designer's Perspective:

1. A solenoid actuator will be used which can be controlled by any microcontroller.

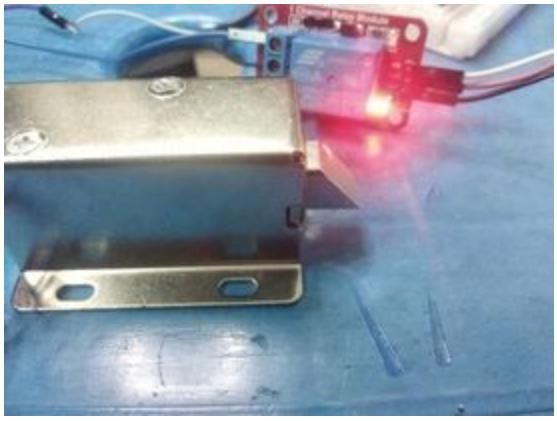

Fig 3.1: Solenoid Actuator as lock.

2. An internet connection supported microcontroller / development board will be used to control the actuator according to the user's virtual and physical input.
3. Power source is needed to power the microcontroller and actuator.
4. Internet connection will be provided to the microcontroller to maintain the connection with the virtual user interface.
5. The actuator will be placed in such a way that it can hold the door while it will be closed.
6. A virtual user interface will be developed to control the actuator with the internet.
7. A push button will be included in the system to control the actuator which will be also synchronised with the virtual interface.

Constraints:

1. Correct power sources and power adapters are needed to power up the microcontroller and actuator.
2. User friendly virtual user interfaces need to be developed with effectiveness.
3. The door needs to be aligned in case of closing.
4. Power failure can cause the lock system to fail.
5. Internet connection failure will cause the system to perform internet related operations.
6. The total system will cost: Nearly 10$.
7. It can be built within a short period of time.

Require Specification:

User's Perspective:

1. Users can open the door using an online virtual interface created with blynk which can be accessed by any android device with internet connection.