

# ***Integration of systems***

## ***Script of scenarios***

### **Scenario #1** (The user enters home walking):

- When a user comes from outside and wants to get inside, he must enter a password of 4 numeric digits (0:9) on the keypad to unlock the security system.
- We use two-ways Authentication method to verify owner identity, and here's outside method:
  - (password is Right) →
    - the password Led will turn into Green.
    - The servo opens the front door.
  - (password is Wrong) → (@first and second times)
    - The password Led will turn into Red.
    - The servo doesn't act.
  - (password is Wrong) → (@Third time)
    - Send notification to user's phone on the app to unlock the system because it's the only way to enter home!
    - The buzzer makes Siren sound.
    - The garden turn into Red even if it's morning.
    - The password Led will turn into Red.
  - (password is Wrong) → (@fourth time on **App**)
    - The whole system locked completely for an hour.
    - sends a call to nearest police station to check, but if there's a fire inside, the systems unlock for firemen to distinguish it and stop any other working system like fans and lighting systems.
    - The buzzer and lights still as they are from third wrong trial no changes.

- The only way to unlock the system in this case is through the police that has a code after checking the owner's identity.
- Inside house method authentication:
- When user enters, he finds another keypad that must enter its password within 30 seconds of entry, or the buzzer will go loud.
  - (password is Right) →
    - The system unlocked and first floor lights turn on (White).
  - (password is Wrong) → (@first and second times)
    - The password Led will turn into Red.
  - (password is Wrong) → (@Third time)
    - The system locks the user inside the house and shuts down immediately keypad access and lights inside still off and garden lights turns red and buzzer starts.
    - The only way is to unlock it through the phone App using Phrase of 6 random words and then 6 numeric digits after this system unlocks safely.
    - But if there's fire for 5 min (Sensor reads same values for 5 min) , then open system and send call to fire station and close other systems.
  - (password is Wrong) → (@fourth time on App)
    - The system locks immediately until police arrival and lights outside and inside flash red and buzzer goes loud to alarm neighbors.
    - The only way to shut this down is through the police.

- But if the thief tried to fire the house to unlock the system, in this case we make a delay of 5 min or until help arrives and unlocks it.

### **Scenario #2** (The user enters home with his car):

- The ultrasonic sensor should sense the car from 10 cm away and then servo opens garage door and lights, but this after wall authentication mentioned before and plus this he must as well enter second keypad password.

### **Scenario #3** (The user enters home without problems):

- He can check on other systems through keypad using (A, B, C,D) buttons and control them as well from App.
- When he goes up the stairs, the room lights turn on and first floor lights off using PIR motion sensor on second floor or when he gets out using keypad (A).

### **Scenario #4** (there is fire):

- There's fire while someone inside house.
  - Read values from flame for 1 min and then.
  - The system unlocks and calls fire station.
  - Garden lights turn red.
  - Buzzer sound to alarm neighbors
- There's fire while someone is outside house.
  - Read values from flame for 3 min and then.
  - Same actions as above

### **Scenario #5** (The weather is hot):

- The temperature sensor checks if it's above 25 C, opens fan.
- If it's below that don't, and he can override this through either App or keypad.
- All this will be useless in case of fire happened, I mean the priority is to get people outside.

### **Scenario #6** (in the morning):

- The LDR reads value if it's in morning turns off garden lights.
- Otherwise open them or even turn red if there's a fire or a thief tries to get in to house.

### **Notes:**

- The first keypad will be on the house outside wall.
- The second keypad is inside the house.
- The third keypad is on the second floor to control systems like air and lights.
- The garage body is separated from the house but inside the parameters.
-