

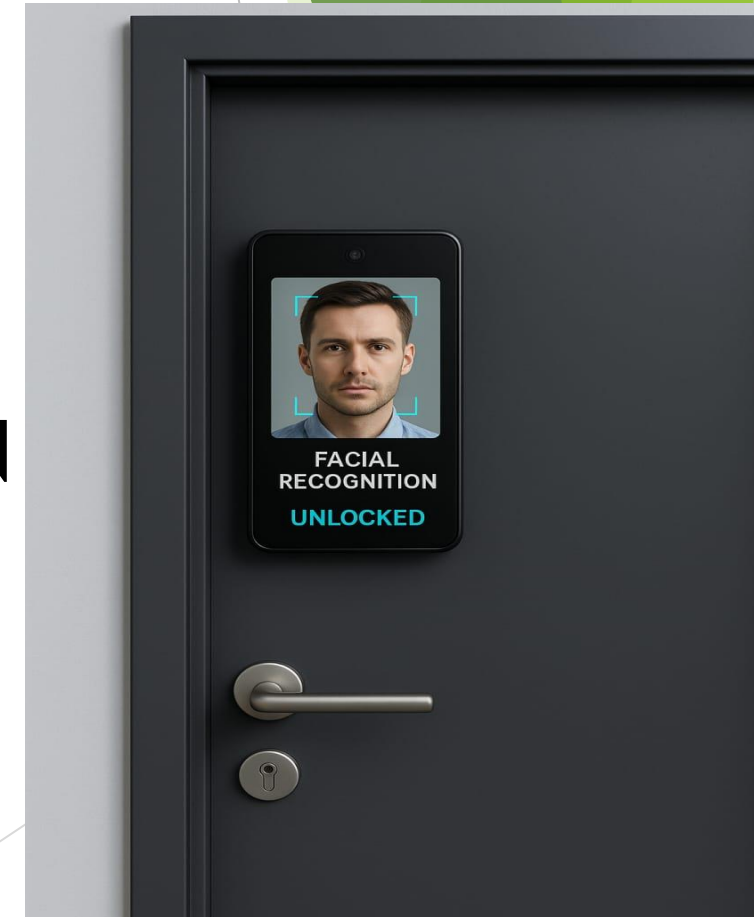
TECHNO-BLAZE



TEAM MEMBERS:

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PROJECT OVERVIEW

FACIAL RECOGNITION DOOR

- **Problem Statement:** Traditional locks can be lost, stolen, or duplicated, leading to security risks and inconvenience.
- **Objective:** To design a secure and contactless door access system using facial recognition.

PROPOSED SOLUTION:

A smart facial recognition door lock that replaces keys with biometric access, preventing loss, theft, or duplication while ensuring fast, secure, and convenient entry.

Key Features:

- ▶ • Automatic face detection
- ▶ • Door unlocks only for authorized users
- ▶ • Enhances security and convenience

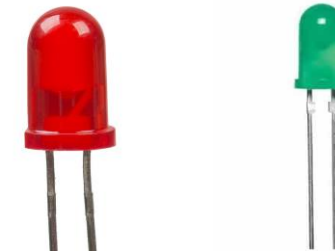
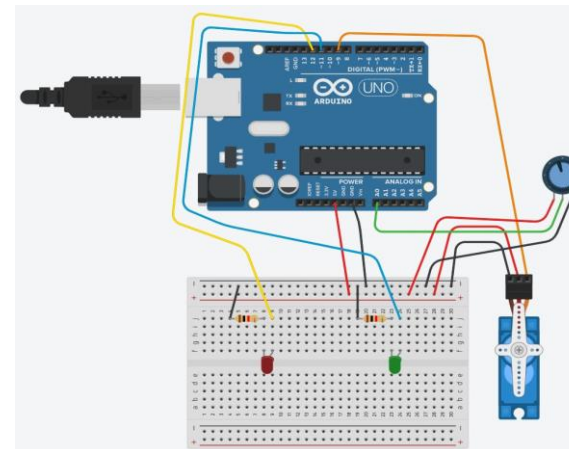
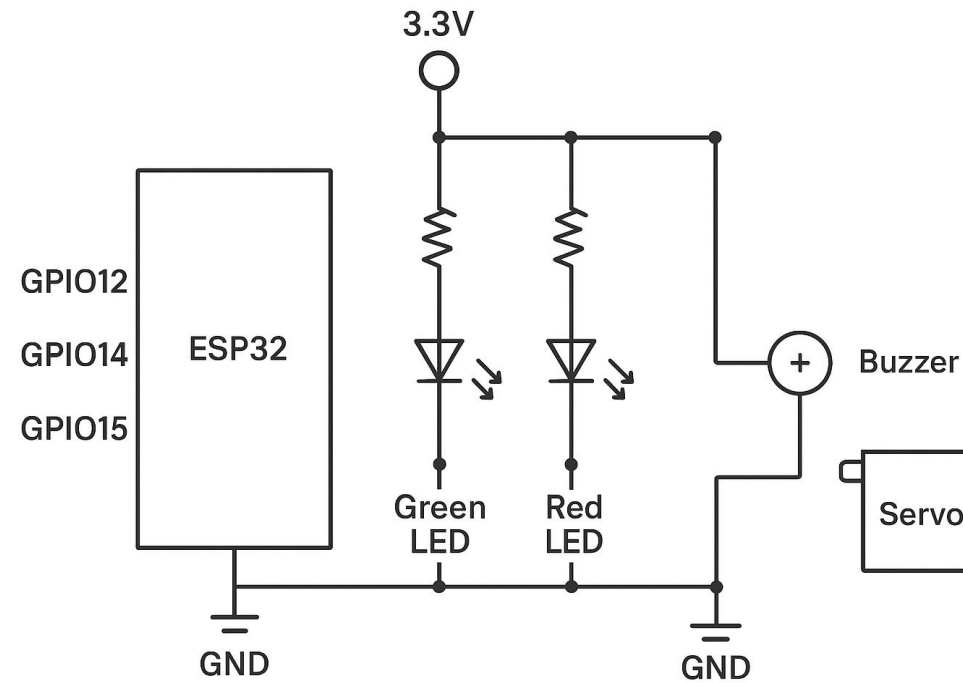


Arduino Code

```
FinalDetection | Arduino IDE 2.3.6
File Edit Sketch Tools Help
ESP32 Dev Module
FinalDetection.ino
1 #include <ESP32Servo.h>
2
3 // Define pins
4 const int GREEN_LED_PIN = 12;
5 const int RED_LED_PIN = 14;
6 const int BUZZER_PIN = 15;
7 const int SERVO_PIN = 13;
8
9 Servo myServo;
10 const int SERVO_OPEN_POS = 0;
11 const int SERVO_CLOSED_POS = 90;
12
13 // System states
14 enum SystemState {
15     STATE_NO_FACE, // No face detected
16     STATE_FACE_RECOGNIZED, // Specific person recognized
17     STATE_FACE_UNRECOGNIZED // Face detected but not the specific person
18 };
19 SystemState currentState = STATE_NO_FACE;
20
21 String inputString = "";
22 bool stringComplete = false;
23
24 // Buzzer timing
25 unsigned long lastBuzzerTime = 0;
26 const unsigned long BUZZER_INTERVAL = 300;
27
28 // State change debouncing
```

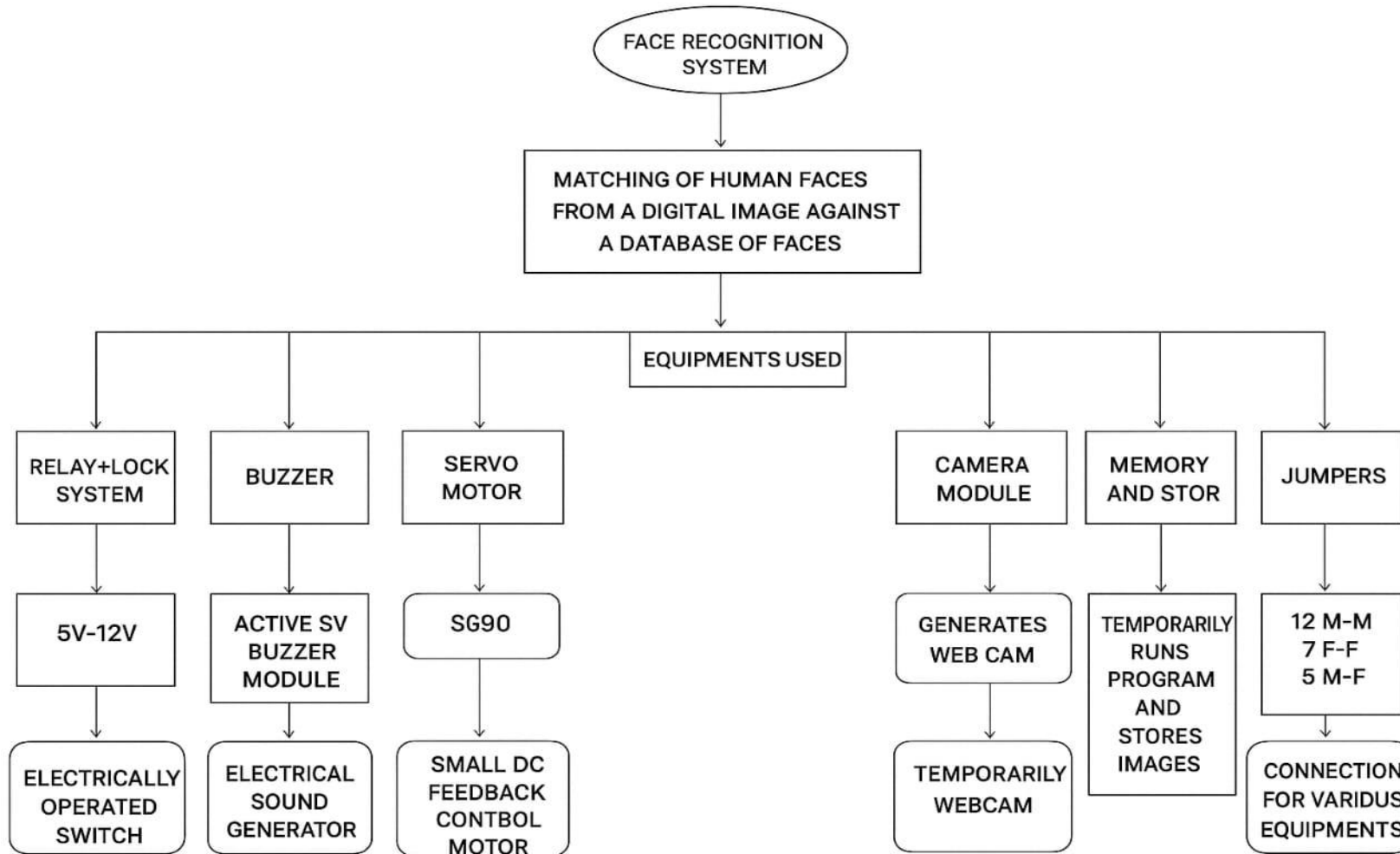
This is the code for ESP32

► Circuit Diagram



Implementation & Tools

- Software: Arduino IDE (ESP32), PyCharm, Tensorflow, OpenCV, Numpy
- Hardware: ESP32, Web cam, Servo motor, Power supply (Laptop), Buzzer, 220 ohm resistors (TWO)



Novelty

- Works for few people at home or many people in offices/hostels
- Can be linked with apps, cloud and smart devices to add more features later

Scalability

- Works for few people at home or many people in offices/hostels
- Can be linked with apps, cloud, and smart devices to add more features later

Adaptability

- Works in different light and places
- Can connect with CCTV, alarms, or smart home systems
- Can get software updates to stay up to date

Target Audience

- Families at home
- Offices and hostels
- Hospitals and hotels
- High-security places like government buildings



THANKING YOU

GIT HUB LINK:-