SMART PARKING PHASE - 2
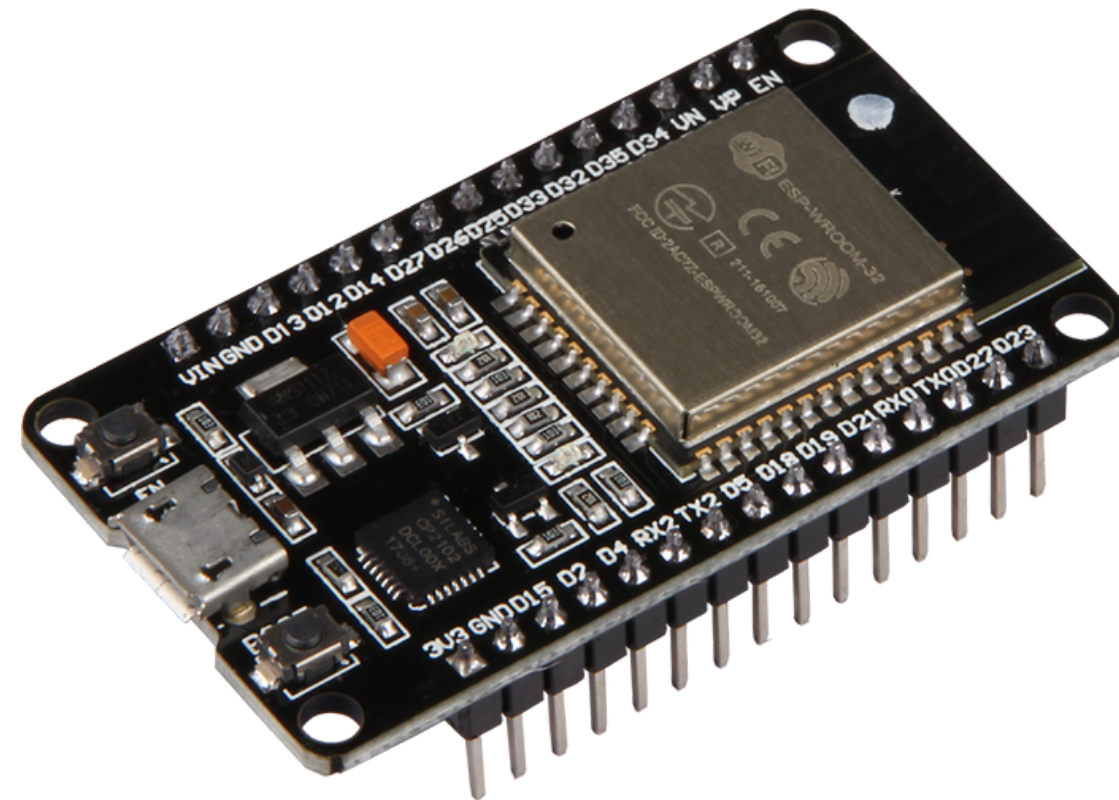
PROJECT 6

MICROCONTROLLERS

We've chosen to use ESP32 and Arduino microcontroller because,

ESP32:

- ESP32 provides WiFi and Bluetooth capabilities for real-time data exchange and communication within the smart parking system and It features a dual-core processor managing sensor data and communication tasks.
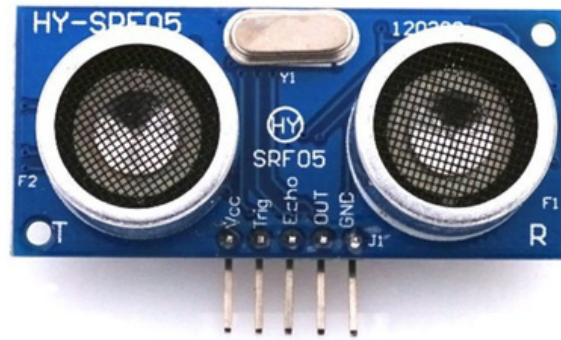
Arduino UNO:

- Arduino UNO offers simplifying programming and customization and It is flexible and suitable for local data processing and control, ensuring adaptability to project-specific needs within the smart parking system.
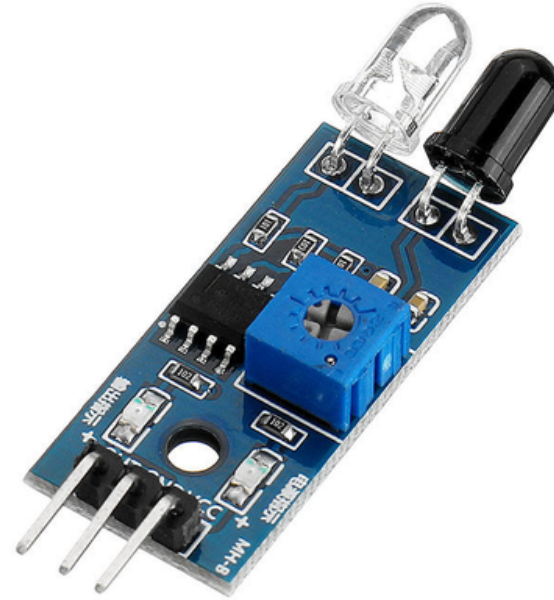
SENSORS AND OTHER COMPONENTS

Ultrasonic sensor
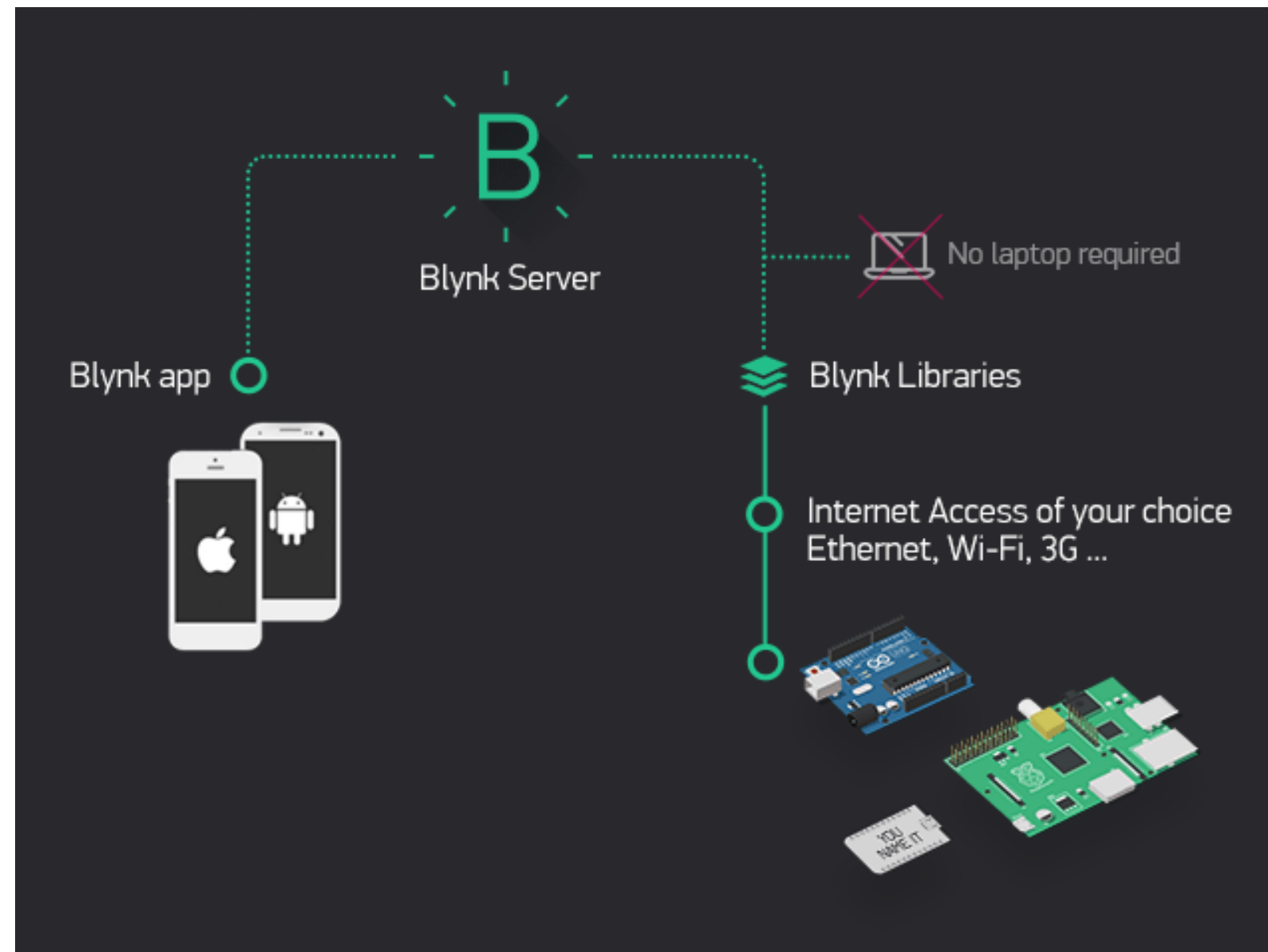
Infrared sensor

LCD Display

Servo motor

ESP32S3 camera module

1. **Ultrasonic Sensor**: Used for detecting vehicle presence in parking spaces by sending and receiving ultrasonic waves, allowing the system to determine occupancy.
2. **Infrared Sensor**: Detects vehicle presence by emitting infrared beams and registering spaces as occupied when a vehicle obstructs the beam.
3. **Servo Motor**: Provides precise control over gates or barriers for automated entry and exit management within the smart parking system.
4. **LCD Display**: Offers real-time information to drivers, such as available parking spaces, instructions, and relevant details to assist in efficient parking.
5. **Camera**: Used for surveillance and monitoring, capturing images and video footage for security and documentation purposes, including license plate recognition.

Blynk:

Blynk is suitable for our smart parking project due to its user friendly interface, customizable widegets and mobile app integration allowing us to create an efficient system for monitoring parking availability and controlling access in real-time.

THANK YOU