IoT Communication Network
A computer network of tiny computers
Mid Presentation

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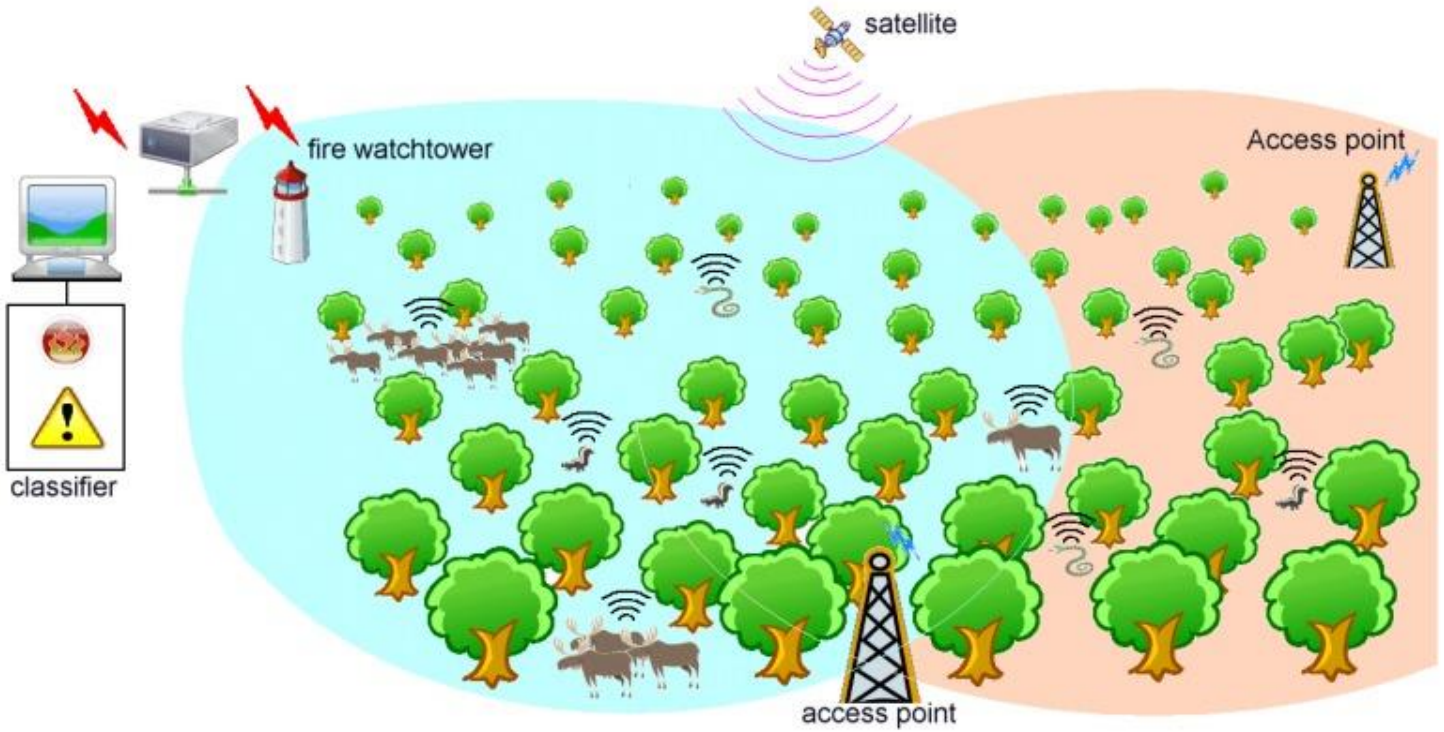


Motivation

Forest Fire detection systems face many obstacles:

- Networking
- Expensive Systems
- Covering large areas

Project Goals

- Establish communication between tiny computers without access point
- Setting up a server that communicates with the tiny computers Network

Minimal requirements :

- Cheap
- Efficiency

Potential Solution

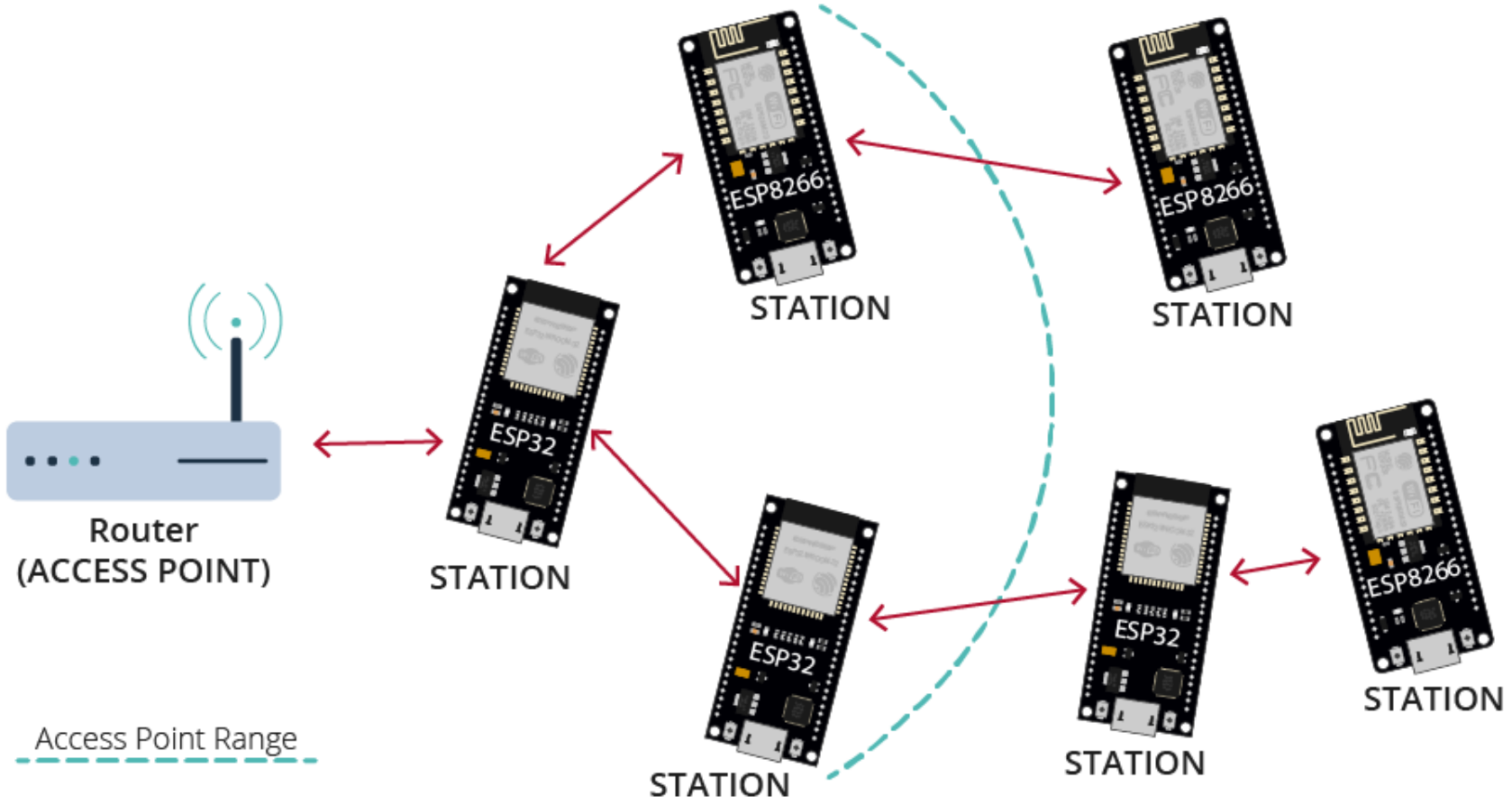
esp32 cam

painlessMesh Library

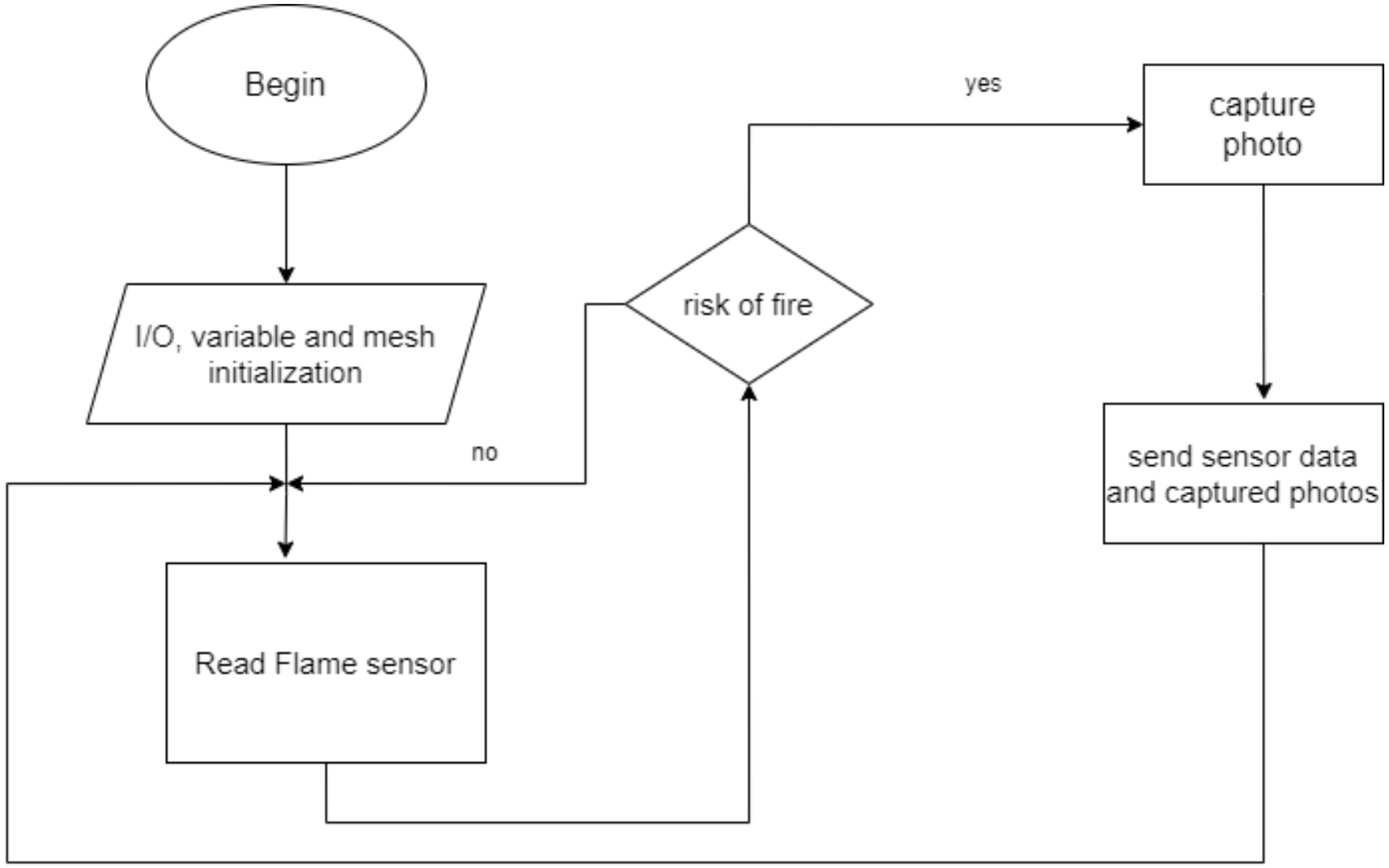
JSON

Json foramt

Solution Diagram



SW FLOW CHART



Development Environments

- ✓ Software:
  - Arduino IDE

Required Models

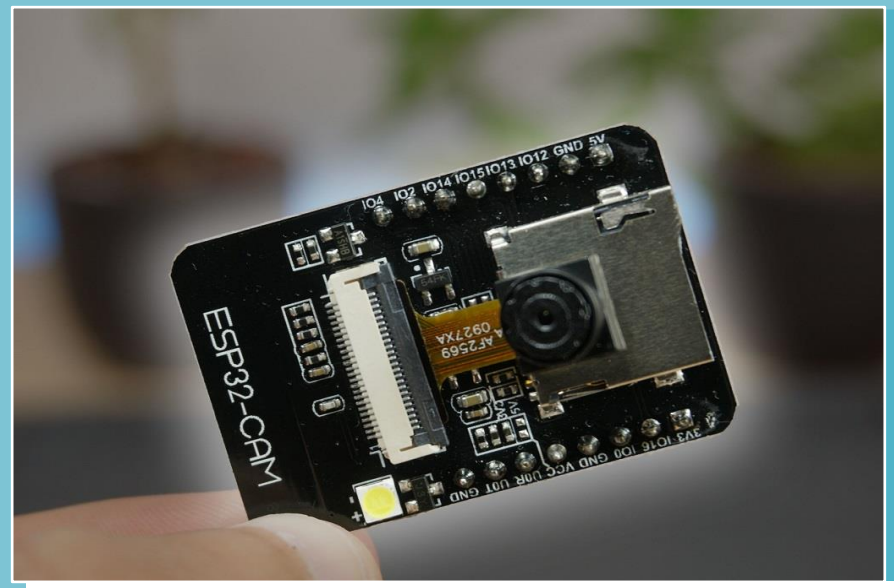
Ready to use:

- Arduino libraries
- painlessMesh
- TaskScheduler
- ArduinoJson
- AsyncTCP

To be developed:

- restAPI Server

Proposed Components

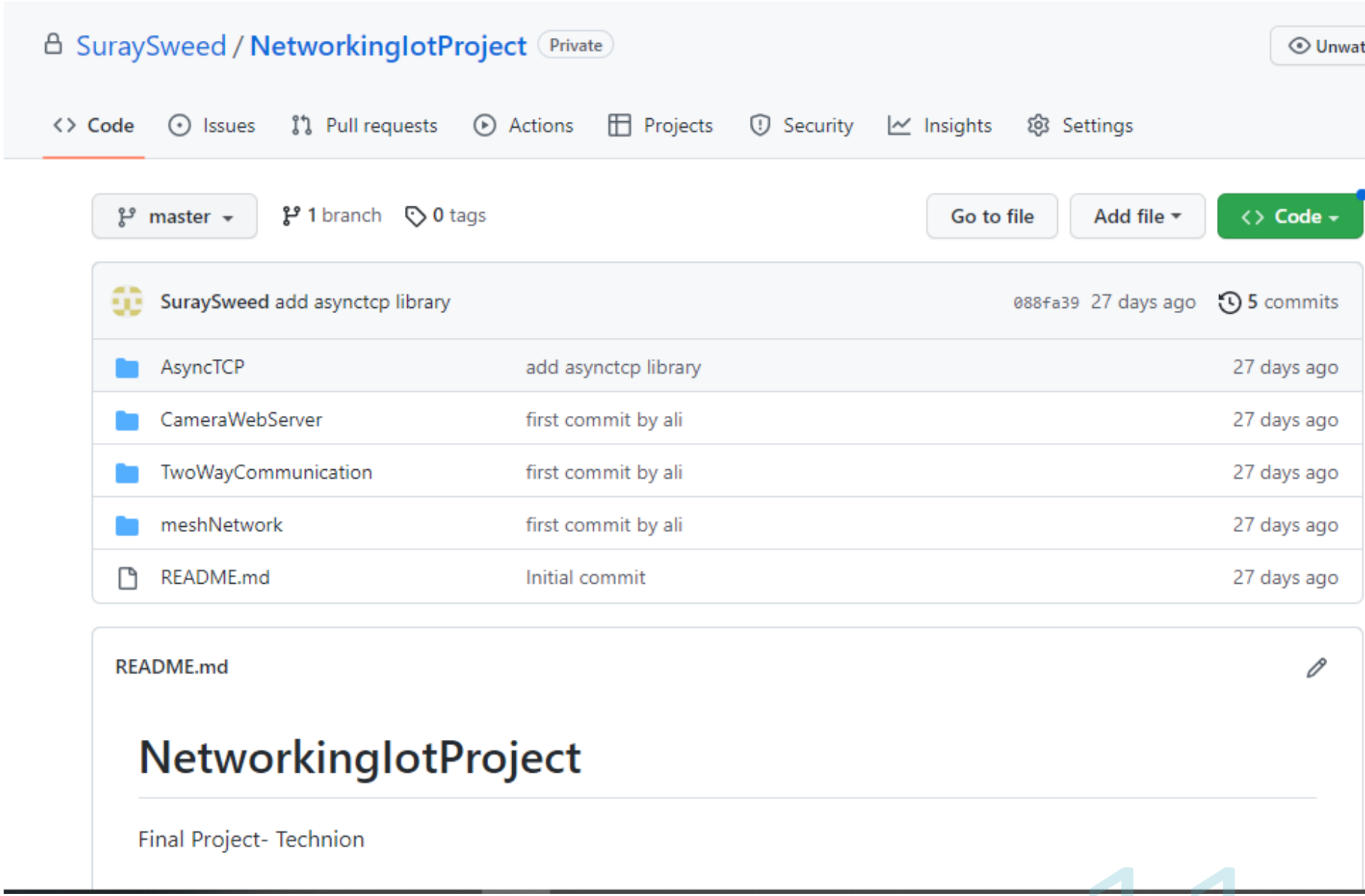


Processor
esp32 cam

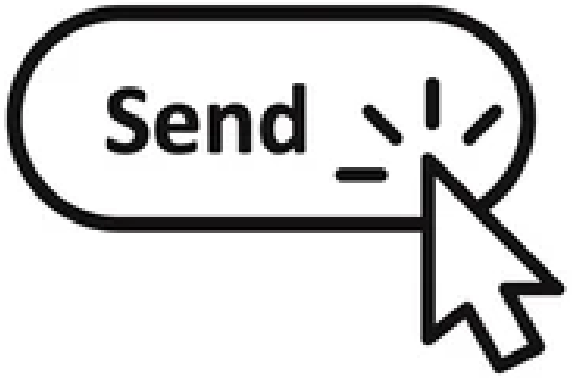
Number of cores	2 (dual core)
Wi-Fi	2.4 GHz up to 150 Mbits/s
Bluetooth	BLE (Bluetooth Low Energy) and legacy Bluetooth
Architecture	32 bits
Clock frequency	Up to 240 MHz
RAM	512 KB

- Esp32 cam is dual core.
- It has WI-FI, camera and Bluetooth built-in.
- It runs 32 bit program.
- The esp32 cam can be programmed using many different development environments. Code can be written in c or in MicroPython.

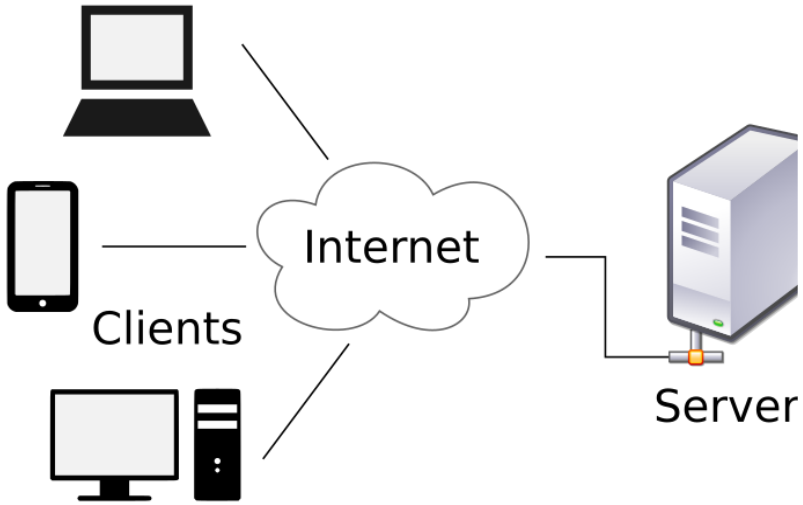
Project Management




WHAT'S
NEXT ?



Send images between esp’s



restAPI Server