ESP 32 lifi project

🛰️ ESP32 Li-Fi Transmitter & Receiver

A simple project that demonstrates how to transmit data wirelessly using **visible light (Li-Fi)** between two **ESP32 boards**. This setup uses an LED as a transmitter and a photosensitive module (like a photodiode or LDR) as a receiver.

🔗 GitHub Repo: esp32-lifi-tx-rx

📦 What's in this Project

- **Two ESP32 boards**: one for transmitting, one for receiving.
- **LED light** sends binary signals.
- **Light sensor module** receives the signals.
- Data is read over the **Serial Monitor**.
- Basic version — you can expand to send more complex messages.

🧩 Components

Component	Description
ESP32 Dev Board (x2)	One for TX, one for RX
LED	Used to send signals as light
Photosensitive sensor	Detects light intensity
Resistors	For current-limiting or voltage dividers
Potentiometer (optional)	To adjust RX sensor threshold
Breadboard + wires	For quick prototyping

⚙️ Connections

🔼 Transmitter (TX ESP32)

- **GPIO 21** → LED (via resistor)
- GND → LED cathode (shorter leg)

🔽 Receiver (RX ESP32)

- **GPIO 32** → Sensor **DO pin**
- **GPIO 21** → Sensor **AO pin** (optional use)
- GND and 3.3V → Sensor power