WIRELESS SENSOR NETWORK WITHOUT IP ADDRESS

EXISTING SYSTEM :

Traditional wireless sensor networks (WSNs), especially those used in IoT applications, usually rely on IP-based networking protocols such as Wi-Fi or Ethernet. Sensors nodes communicate via routers, each with unique IP addresses, using complex protocols like TCP/IP, MQTT, or HTTP. This adds cost, complexity, setup time, and requires more power. Wired sensor networks are simpler but need physical connections, reducing flexibility and scalability.

OUR PROPOSED SYSTEM :

Our project implements a **simple, low-cost, and IP-less wireless sensor network** using **Frequency Shift Keying (FSK)** for communication. The system consists of sensor nodes (Arduino-based) that collect various physical parameters (temperature, IR/object detection, light, water level), display readings locally (LCD), and **wirelessly transmit** sensor data to a receiver using the **CC1101 FSK RF module** (433/434 MHz band). The receiver end captures these signals and displays the received sensor data on an LCD or via Serial output.

ADVANTAGES OF THIS SYSTEM :

- **No IP Required:** Completely avoids IP addressing, network stack, and associated complexities.
- **Low Cost:** Uses readily available modules (CC1101, Arduino Nano), no need for routers or gateways.
- **Low Power:** Simpler wireless protocol consumes less energy than Wi-Fi/Ethernet stacks.
- **Simple to Implement & Scale:** Easy to add/remove sensor nodes (just add Arduino + FSK module).
- **Noise Robustness:** FSK is highly resistant to ambient RF noise, making data transmission reliable even in basic setups.
- **Useful for Local/Offline Applications:** Suitable where internet is unavailable or undesirable (remote farms, warehouses, etc.).