

Wireless Sensor Network-Based Smart Healthcare Monitoring System

Isha Jangir (202211031)

Rajat Kumar Thakur (202211070)

Project Overview:

This project focuses on designing and implementing a Wireless Sensor Network (WSN) for Smart Healthcare. The system will use wearable sensors, and environmental sensors to monitor patients' health, track movement, and ensure safety in smart homes or hospitals. Data from sensors will be transmitted wirelessly to a central monitoring system for real-time analysis and alert generation.

Project Objectives:

1. Deploy a Wireless Sensor Network (WSN) for continuous health monitoring.
2. Monitor physiological parameters using wearable sensors.
3. Develop a data transmission system using Bluetooth, or Wi-Fi.
4. Provide real-time alerts based on sensor readings.

Sensors in this project:

Temperature sensor (e.g., DS18B20)

SpO2 sensor (e.g. MAX30100)

Temperature & Humidity Sensor (e.g. DHT22)

Smoke Sensor (e.g. MQ2)

Wireless Communication System:

1. Bluetooth: Connectivity to mobile devices.
2. Wi-Fi: For real-time data transmission to a central system.


Data Collection & Processing:


1. Microcontroller (e.g., ESP8266): Collects and processes sensor data.
2. Local Storage or Cloud: Data logging for health records.
3. Web/App Interface: Displaying real-time sensor readings.

Expected Outcomes:

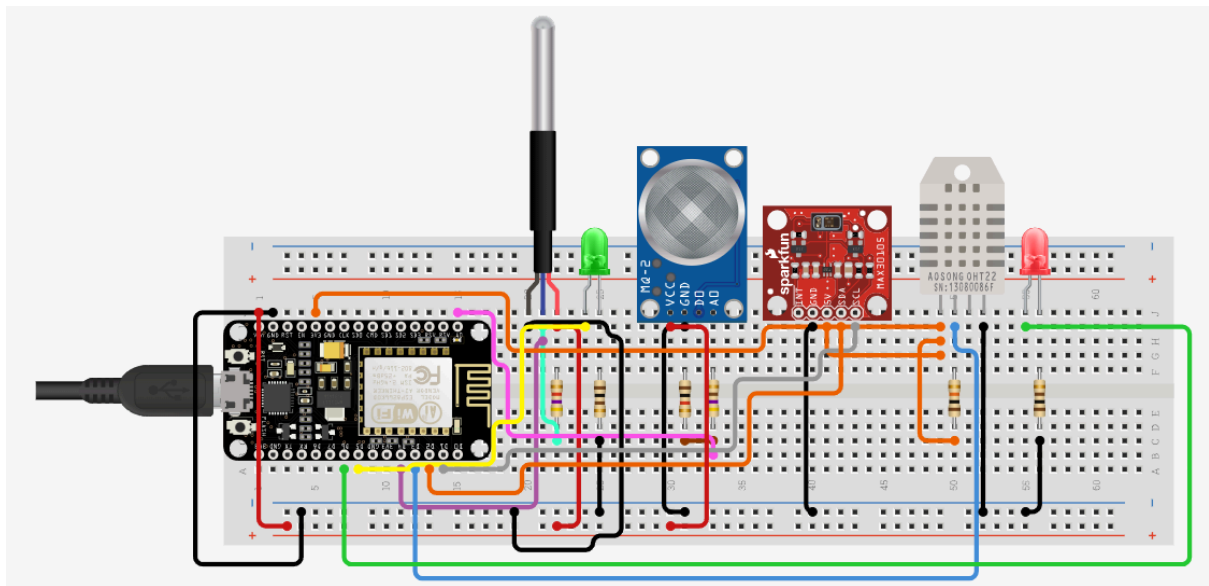
1. Real-time patient health monitoring using WSN.
2. Remote tracking of elderly or patients in hospitals.
3. Improved emergency response with sensor-based alerts.
4. Energy-efficient and scalable healthcare solution.

References:

 [Wireless Sensor Networks for Smart Healthcare.pdf](#)

 [A_Comprehensive_Review_on_Wireless_Healthcare_Monitoring_System_Co...](#)

 [Smart Healthcare Monitoring System Based on.pdf](#)

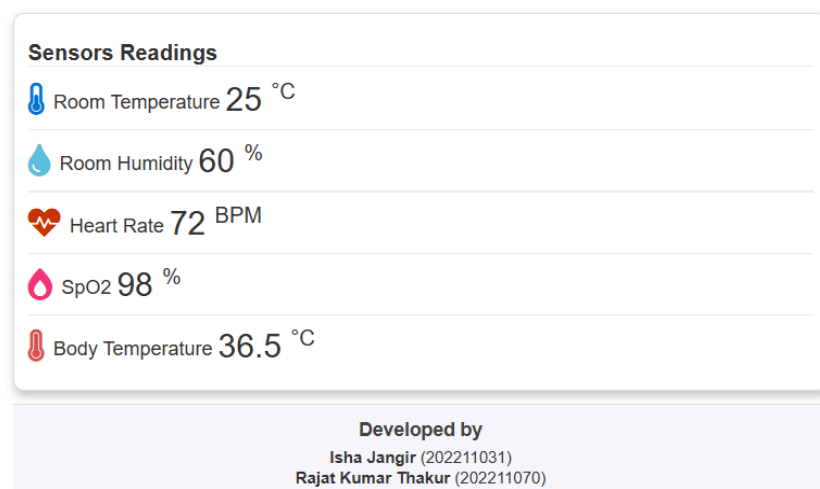


Proposed Circuit Diagram ([reference](#))

S. No.	Component Name	Link	Quantity
1.	Temperature sensor (e.g., DS18B20)	link	1
2.	SpO2 sensor (e.g. MAX30100)	link	1
3.	Temperature & Humidity Sensor (e.g. DHT22)	link	1
4.	Smoke Sensor (e.g. MQ2)	NA	1

Initial Responsive Web Page for data monitoring:

WSN Based Smart Healthcare Monitoring System



Github Repo : [Smart-Healthcare-Monitoring-System](#)