**Cloud based smart healthcare monitoring system**

**Introduction:**

The cloud-based smart healthcare monitoring system is a web-based application that enables healthcare providers to remotely monitor patients' vital signs and health status in real-time. The system uses a combination of wearable devices, mobile apps, and cloud-based infrastructure to collect, transmit, and analyze patient data.

**Project objectives:**

* Provide real-time health monitoring for patients.
* Enable remote access to patient health data.
* Automate alert generation in case of critical health conditions.
* Improve healthcare decision-making with data analytics.
* Ensure data security and privacy.

**System Architecture**

* Wearable sensors and medical devices collect patient vitals.
* Microcontroller Unit (MCU): Processes data from sensors and sends it to the cloud.
* Cloud Server: Stores and analyzes health data.
* Web/Mobile Application: Displays real-time health information and alerts.
* Doctor's Dashboard: Allows healthcare providers to monitor patients remotely.

**Features and Functionalities**

**Patient Module:**

* Patient Registration & Login
* Collection of Patient Data
* Appointment Scheduling
* Automatic Token and Patient Name Announcement

**Doctor & Staff Module:**

Doctor & Staff Login

Medical History Storage

Doctor Schedule Management

**Hospital Management Module:**

* Hospital Stock Management
* Billing System

**Software Requirements**

**Backend**

- Python for API development

- PostgreSQL for database management

- HTTP protocols for sensor data communication

- AWS SNS for real-time notifications

- Pandas for data processing and analytics

**Frontend**

- HTML, CSS, JavaScript

**Cloud Services**

- AWS for hosting, storage, and computing

- AWS for event-driven automation

- AWS S3 for storing reports and records

- Firebase for real-time database and notifications