PATIENT HEALTH MONITORING WHEEL CHAIR

ABSTRACT

The IoT-Based Patient Health Monitoring Wheelchair System is an innovative solution designed to improve patient care, safety, and mobility. This system integrates advanced IoT technology with a motorized wheelchair, enabling real-time health monitoring and remote control via an Android application. It is equipped with sensors such as a heart rate monitor, temperature sensor, and an MPU6050 accelerometer and gyroscope module for fall detection. The MPU6050 detects sudden changes in motion or orientation, triggering immediate alerts to caregivers in the event of a fall, ensuring swift intervention.

The wheelchair's movement and functions can be controlled through the Android app, providing enhanced convenience for patients with limited mobility. Real-time health data is collected and transmitted to caregivers and medical professionals, while cloud storage allows for long-term health tracking and remote consultation. Emergency alert mechanisms further enhance patient safety by notifying caregivers of critical health conditions or falls.

This comprehensive system is particularly suited for hospitals, elder care facilities, and home healthcare environments, offering a safe, efficient, and user-friendly approach to mobility assistance and patient health management. By combining mobility support, health monitoring, and fall detection, the system significantly improves patient safety and the quality of care

BLOCK DIAGRAM

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                            ┌──────────────────┐
                            │  POWER SUPPLY    │
                            └──────────────────┘
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┌──────────────────┐                            ┌──────────────────┐        ┌──────────────┐
│   TEMPERATURE    │ ──────▶                    │      L293D        │ ─────▶ │  DC MOTOR 1  │
│     SENSOR       │                            │  MOTOR DRIVER     │        └──────────────┘
└──────────────────┘          ┌─────────────┐   │       IC          │        ┌──────────────┐
                              │             │   └──────────────────┘ ─────▶ │  DC MOTOR 2  │
┌──────────────────┐ ──────▶  │   NODE MCU  │                                └──────────────┘
│   PULSE SENSOR   │          │    ESP32    │
└──────────────────┘          │             │ ──────▶  ┌──────────────────┐
                              │             │          │ LED INDICATIONS  │
┌──────────────────┐ ──────▶  │             │          └──────────────────┘
│     MPU6050      │          │             │
└──────────────────┘          │             │ ◀┈┈┈┈▶   ┌──────────────┐
                              └─────────────┘          │   SERVER     │
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                                                       │ ANDROID APP  │
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