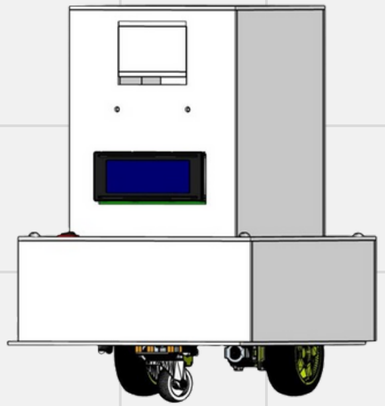
MEDICAL ASSISTANCE

ROBOT



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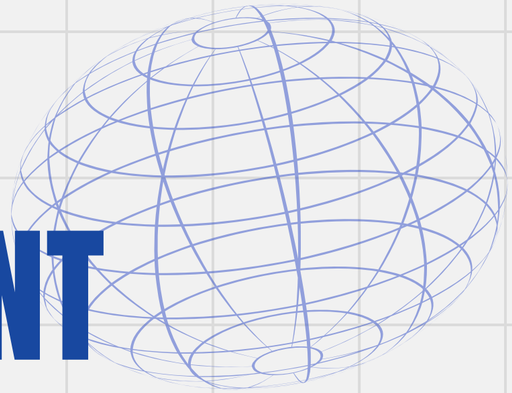

INTRODUCTION

- Purpose: Enhance elderly care by combining robotics with smart monitoring and support.
- Key Functions: Tracks heart rate & temperature; dispenses medication on a schedule.
- Autonomous Mobility: Navigates along set paths to reach and assist patients.
- Caregiver App: Displays real-time vitals, reports, medication schedules, and alerts.
- Impact: Delivers personalized, tech-assisted care with a human-centered approach.

PROBLEM STATEMENTS

1. Medication Non-Compliance by Elderly Patients
2. Overburdened Caregivers
3. Lack of Real-Time Health Monitoring
4. Absence of Medical Record Tracking
5. Limited Automation in Elderly Care

SOLUTIONS

1. Medical Assistance Robot (MAR)
2. Automated Health Monitoring
3. Scheduled Medication Dispensing
4. Buzzer Alerts for Interaction
5. Mobile App for Caregivers

COMPONENTS

- Arduino Mega – Main controller that manages all hardware operations.
- IR Sensors – Detects line on the floor for robot navigation.
- Ultrasonic Sensor – Senses obstacles to prevent collisions.
- DC Motors – Drives the robot forward and backward.
- Servo Motor – Dispenses pills by rotating a tray or flap.
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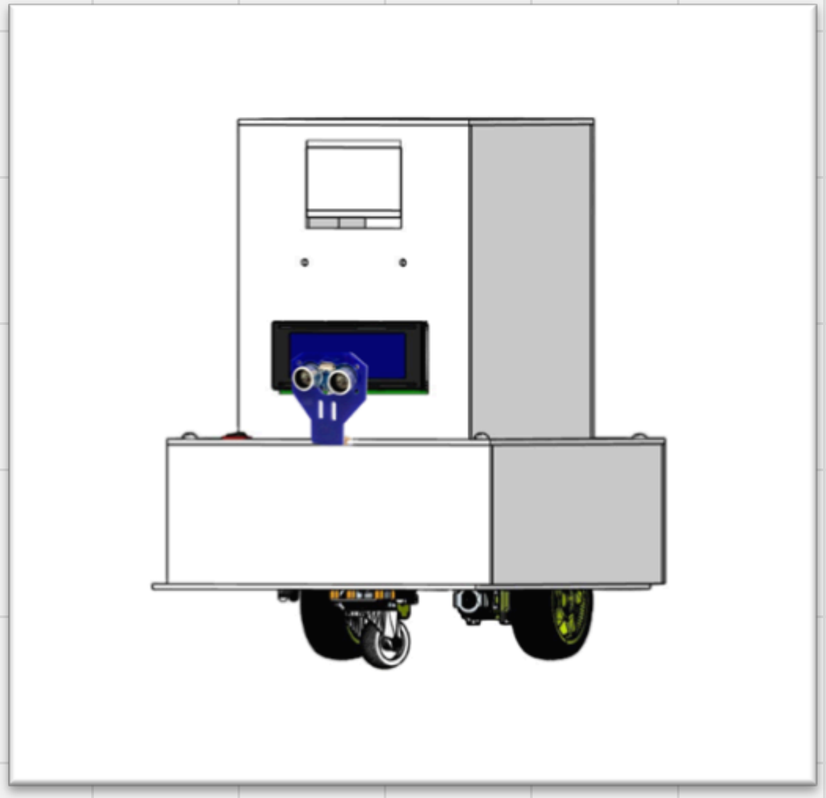
COMPONENTS

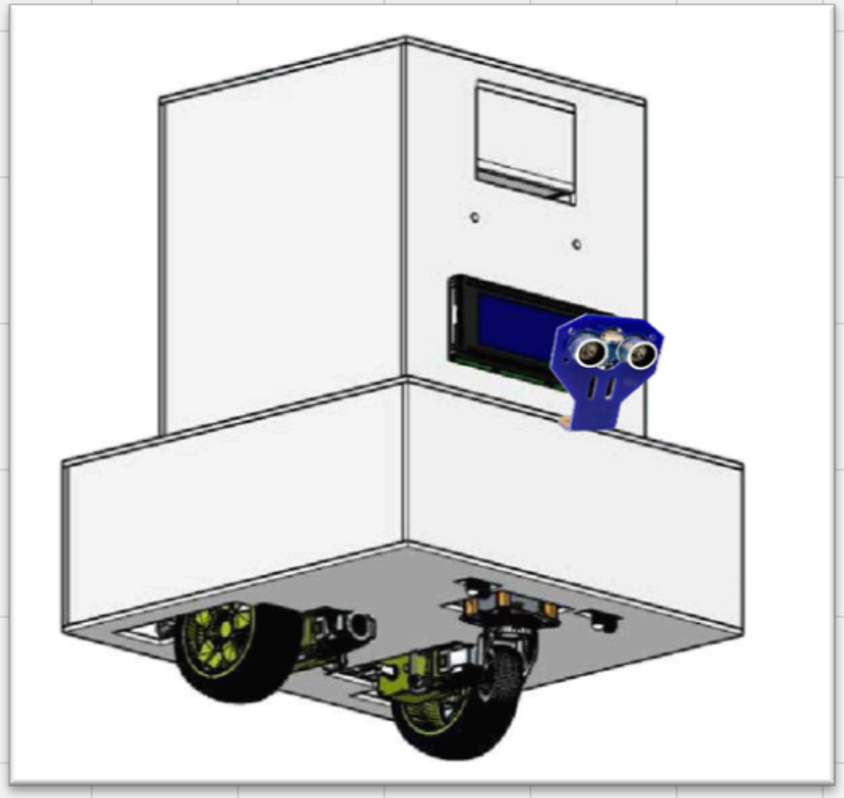
- RTC Module (Real-Time Clock) – Keeps track of time to schedule pill dispensing.
- Temperature Sensor – Measures the patient’s body temperature.
- Pulse Sensor – Measures heart rate and supports weekly average calculation.
- NodeMCU (ESP8266/ESP32) – Sends health data to a mobile app via Wi-Fi.
- Buzzer – Alerts the patient for pill time or abnormal vitals.

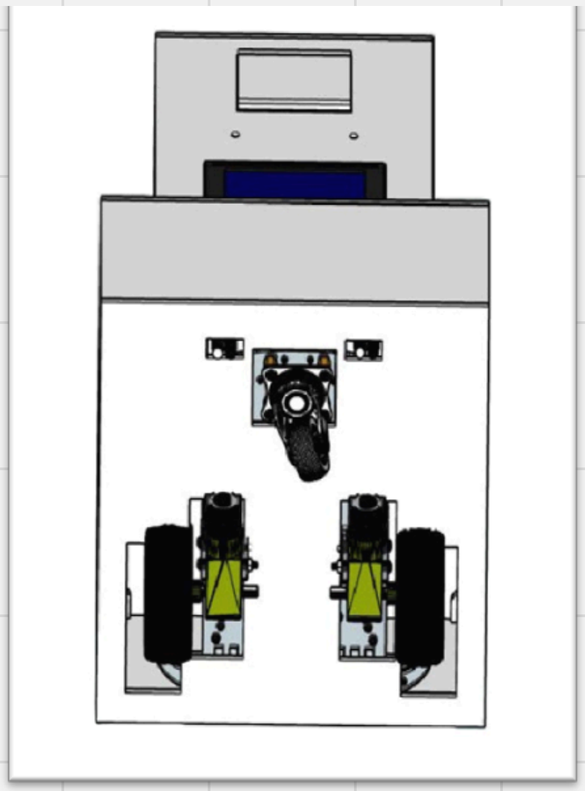
FEATURES

- Autonomous Movement
- Pill Dispensing
- Vital Sign Monitoring
- Mobile App Features
- Return to Charging Dock
- Weekly Heart Rate Summary

DESIGN







ADVANTAGES

Reminders to take medicine

Automatic medicine delivery

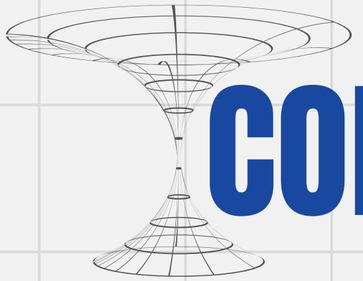
Temperature and heart rate check up

Medical history

Average heart rate check up throughout the week

Adding medicine

Setting reminders for medicine



CONCLUSION

The medical assistance robot redefines monitoring, medication, and mobility – a step toward safer, smarter, and more compassionate caregiving.

THANK YOU