JAIN COLLEGE OF ENGINEERING BELAGAVI

Title of the project: *"Mobility and Health Assistance Bot for Disabled"*

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Introduction: Interfacing of Healthcare and Technology is one among the great concepts that is making our lives easier. One such aspect is the Mobility assistance and Health monitoring bot which is a Bluetooth aided system designed to aid individuals with mobility issues in their daily activities while monitoring their health status. In this regard, tasks including using washrooms have a higher prevalence rate of injuries and greater risk of falling. A body-transfer wheelchair is developed to assist people in mobility, A wheelchair with a scooping and lifting function is designed to assist a caregiver when transferring a wheelchair user not only in hospitals but also at home. The system uses Bluetooth and Arduino UNO to assist the user's movements and provide assistance when needed. It also monitors vital signs, such as temperature,moisture and Pulse using ESP8266, LM35, moisture sensor and Pulse sensor.The Temperature, Moisture and Heart rate values are stored on Cloud using Thinkspeak for regular monitoring. An emergency Alerting facility is made available which sends an alert to the guardian if the values go beyond the preset values. This innovative technology aims to improve the quality of life for those with mobility challenges while enhancing their health monitoring capabilities.

"smart wheelchair with health monitoring and assistance features for elderly people" by k. m. choudhury, a. m. syed, and f. saleh. this research study proposes a smart wheelchair that uses bluetooth technology to monitor health parameters such as heart rate, blood pressure, and oxygen saturation. the wheelchair also includes a mobility assistance feature that can help individuals with mobility challenges to move around more easily.

Methodology The health monitoring aspects of the project ideals with monitoring the vital signs of a Patient such as Temperature, Moisture and pulse. The sensors used used for monitoring Temperature is LM35, Soil Moisture sensor is used for monitoring moisture levels and a heart rate sensor is used for Pulse monitoring.

The values acquired from the sensors are displayed through LCD and are uploaded to Cloud on Thinkspeak. The Thinkspeak dashboard has 3 displays, one to show the graphical representation of the temperature,one for Moisture level and another to display heart rate at every instance.An alarming message is sent to the Guardian is the current values of temperature, humidity and pulse gathered from the sensor crosses the preset normal values.
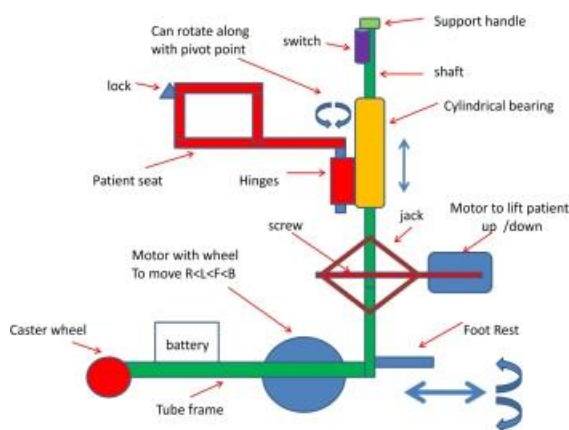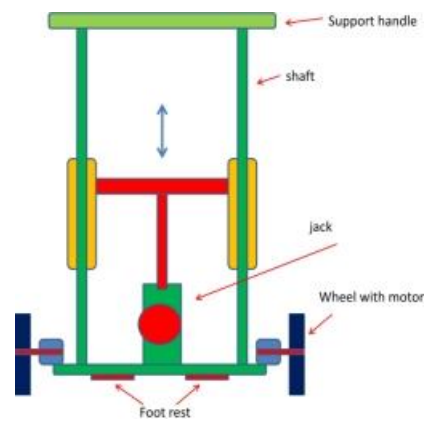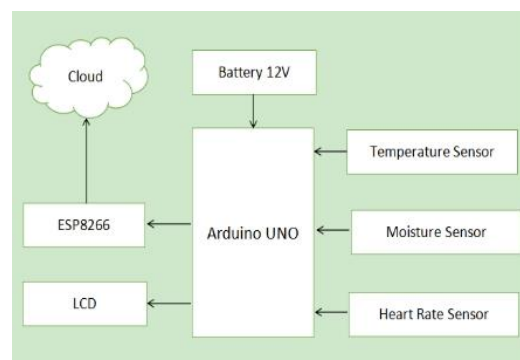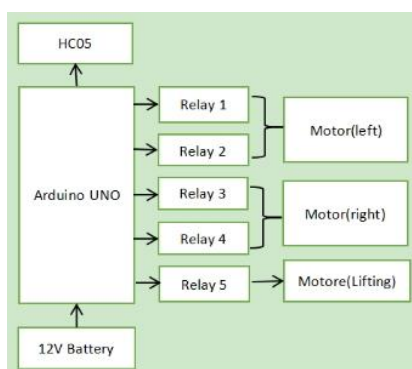
LINE DIAGRAM

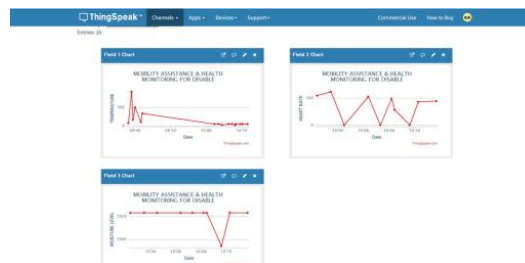Fig Side View   Fig Front View

BLOCK DIAGRAM

Results:

SIDEVIEW OF BOT

FRONTVIEW OF BOT

IOT OUTPUT AND RECORDED DATA ON THINGSPEAK

Applications:

- **Mobility Assistance:** The bot could assist with mobility by providing navigation assistance, helping with transfers between chairs and beds, and providing support during walking or standing.

- **Health Monitoring:** The bot could monitor vital signs, such as heart rate and blood pressure, and alert healthcare providers if there are any concerning changes.

- **Record Keeping :** To keep track of all the records and maintain them for future medical records.

Conclusion: The development of a mobility assistance and health monitoring bot for people with disabilities has the potential to greatly improve their quality of life.

Future scope:.For additional improvements it can be Integrated with Smart Home Technology As smart home technology becomes more prevalent, Mobility assistance and health monitoring bot for disabled could be integrated with these systems, allowing users to control their wheelchair and other devices using voice commands or other hands-free methods. We can also add personalized Commands of facilities according to the need of user .