Voice-Enabled Wheelchair to Improve Patient Independence

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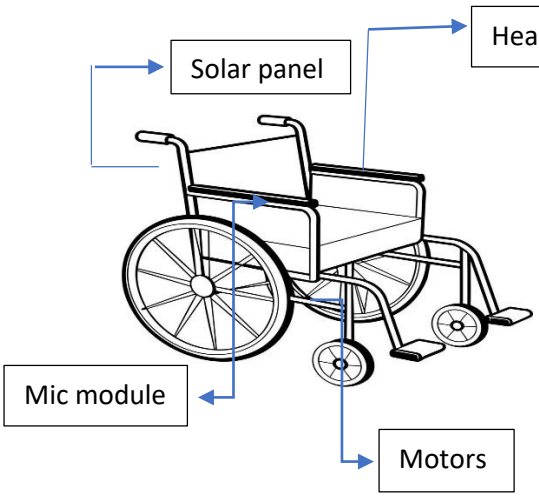
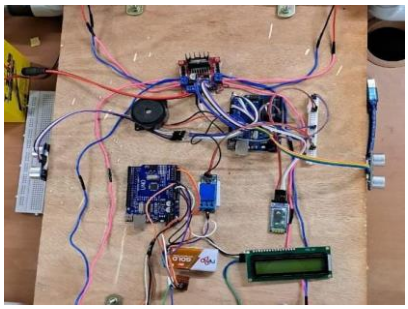
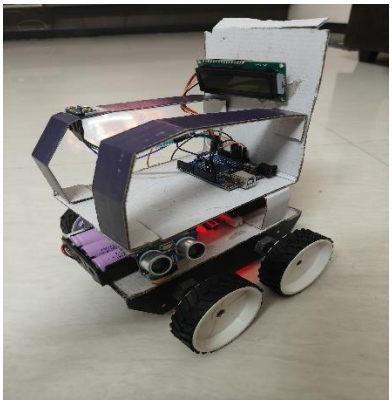
Today's world is more advanced but still face several challenges that limit their accessibility and effectiveness. Most wheelchairs rely on manual or joystick controls, which can be difficult for individuals with severe disabilities or those with limited upper body strength. Furthermore, existing smart wheelchairs with advanced features can be complicated to use or maintain, especially for older individuals or those unfamiliar with technology. Our project is based on "**voice activated smart wheelchairs**" for Elderly and Disabled Patients. As the global population ages and the number of people with mobility challenges rises, the demand for smart, accessible healthcare solutions becomes more pressing. Our project seeks to address this challenge by developing a wheelchair equipped with voice recognition technology that allows users to control its movements and functions through spoken commands, eliminating the need for physical exertion or complex control mechanisms. The core of our project is a microcontroller-based control unit that processes voice commands using speech recognition algorithms and translates them into motor actions. The voice control interface is designed to be intuitive and customizable, enabling users to issue commands for forward, backward, left, right movements, and stop functions. Additionally, our wheelchair incorporates sensors, such as ultrasonic sensors, to detect obstacles in real-time, ensuring safe navigation and preventing collisions in both indoor and outdoor environments. Our voice-activated smart wheelchair offers an innovative, user-friendly solution that enhances mobility, safety, and independence for elderly and disabled individuals.



a) **Blueprint of the wheelchair**



b) **Control pannel**



c) **Voice controlled wheelchair**