VOICE CONTROLLED WHEEL CHAIR WITH COLLISION AVOIDANCE AND STAIRCASE SAFETY SYSTEM

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Keywords :
Voice control, Navigate, Staircase, Collision avoidance.

Introduction :
With the development of medical sciences proliferating, the physically handicapped people still suffer lack of technical aid as the loss of their ability of movement. This project deals with development of prototype of smart voice controlled wheel chair for such people which can be controlled using human Voice commands. The person sitting on the wheel chair is supposed to give the voice commands to the wheel chair, the developed system will analyze the voice commands and navigate the wheel chair according to the command. The project also involves making of wheel chair smart by implementing collision avoidance systems and the staircase anti fall systems so that the wheel chair doesn’t fall from the stairs.

Objective :
1. To develop a smart voice controlled wheel chair.
2. To implement collision avoidance system.
3. To implement Stair case sensing system.
4. To implement heart rate monitoring systems.
5. To design the wheel chair in such a way that it can easily carry the person.

Methodology:
The Methodology to carry out the project is obeying the following steps,
1. Material survey
2. Fabrication of chassis
3. The drive system development
4. The voice control system
5. The health monitoring system
6. The collision avoidance and the anti stair system
7. The assembly

Result and Conclusion :
Though many wheelchairs are available in markets, yet physically handicapped people face the problem of control when they are partially paralyzed. The different solutions for wheel chair has been tried to develop to those people who are not able to move their body parts. This motivates us to develop a smart solution where in the wheel chair can be controlled using voice signals. The proposed project involves development of wheel chair which can recognize human
voice commands and then navigate to the required direction according to the commands given by the wheel chair. Further it also motivates us to include the safety systems in the wheel chair so that the wheel chair doesn’t collide with the obstacles in its path and also do not fall off the stair case. Also the health monitoring systems are included in the project which make it a completely advanced project

**Scope For Future Work:**
The following implementations can be done in the proposed project as a scope for future

1. Still more commands can be involved for the speed variation etc.,
2. The voice commands may be replaced by some other system like Brain Mapping.