SMART WHEEL CHAIR

ABSTRACT:

The Smart wheelchair is designed for paralysed and physically challenged people to be operated using voice Commands. This project uses speech recognition to provide the high tech approach towards the goal to operate wheelchair with less efforts.

By using speech recognition technique for controlling the wheelchair, we have to speak into the microphone and the Raspberry Pi controller follows the commands and perform the operations on the DC motor. This involves real time processing and which recognizes the voice.It also employs location tracker and obstacle avoider.

PROBLEM STATEMENT:

In 2017, the Christopher & Dana Reeve Foundation unveiled staggering statistics based on research into the prevalence of paralysis across the world. According to the study, there are nearly 1 in 50 people living with paralysis – approximately 5.4 million people.

Such people are unable to control the standard joystick interfaced wheelchair. Hence a system with easy user interface is needed. It should provide easy access to them who cannot control the wheelchair with hand movement.

OBJECTIVE:

The objective of the project is to design a system which will make the life of disabled people easier and independent. In this way, voice recognisable wheelchairs are designed where voice control is done with android Bluetooth Smartphone.

EXISTING METHOD:

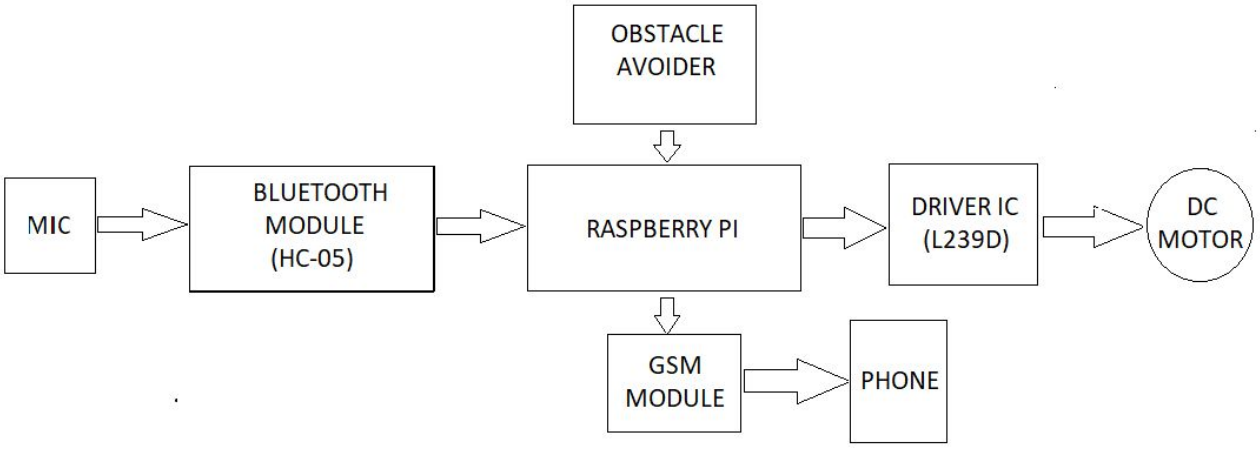
The existing wheelchairs require a manual force for motion . This forces disabled person to always depend on others. Though different kind of automatic systems available in market like joystick control and gesture control. For totally paralysis person it is very difficult to use those types of systems. The existing system is neither cost effective nor user friendly.

There are several different possibilities for the wheelchair control for the disabled person while the speech is most convenient and easy to access alternative.

PROPOSED METHODOLOGY:

The project involves voice supported control of the wheel chair.The commands such as front,back,left and right are said by the user to control the movement of wheel chair .

The Bluetooth module process it to raspberry pi which control wheels based on the commands.An obstacle avoider is implemented to prevent clashing with any objects on the way.Location of the user is shared with the care taker in case of any emergencies.The system can be customised to user's environment (eg:go to kitchen,go to hall)to reduce repetive use of commands.



BUDGET ESTIMATE:

S.NO	COMPONENTS	QTY	COST (Rs)
1	Raspberry Pi-3	1	2900
2	Bluetooth(HC-05)	1	350
3	Ultrasonic sensor(HC-SR04)	1	100
4	GSM modem(SIM900A)	1	1200
5	DC motor driver(l239d)	1	400
6	DC motor	1	500
7	Wheel chair	1	5000
	TOTAL		10,450

REFERENCES:

1. VOICE OPERATED WHEELCHAIR FOR PHYSICALLY CHALLENGED PEOPLE 1 SMITA U. UPASE, 2A. K. JOSHI International Journal of Advances in Science Engineering and Technology, ISSN: 2321-9009, Vol-4, Iss-3, Spl. Issue-1 Aug.-2016
2. Wheel Chair Robot using Raspberry Pi TATIGUTLA AKHILA1 , BADAVATH MOHANRAO, ISSN 2348–2370 Vol.09,Issue.09, August-2017, Pages:1415-1419.