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Intelligent Gesture Controlled Robot for Disabled/Elder People Support

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ABSTRACT: Today intelligent machines and systems with different level of complexity are used to perform the various processes in the industry and also everyday life. In order to improve the self-reliance capacity of physically disabled and elderly people, this paper develops an assistive tool by using robot that senses hand position and works corresponding direction.robots are programmed to perform specific tasks which humans cannot. To increase the use of robots where conditions are not certain such as fire fighting or rescue operations, robots can be made which follow the instruction of human operator and perform the task. This paper describes about the gesture control robot which can be controlled by your normal hand gesture.the program is designed by using PIC16F877A

I. INTRODUCTION

Robots are used increasingly in wartime situations to reduce human casualties, being used for a mix of both combat against the enemy and non-combat roles. Today's military robots don't do a whole lot on their own.A Gesture Controlled robot is a kind of robot which can be controlled by your hand gestures not by old buttons. You just need to wear a small transmitting device in your hand which included an acceleration meter.

This will transmit an appropriate command to the robot so that it can do whatever we want. The robot land rover is a linked remote controlled one. It consists of mainly two parts, one is transmitter part and another is receiver part. The transmitter will transmit the signal according to the position of accelerometer and your hand gesture and the receiver will receive the signal and make the robot move in respective direction

II. EXPERIMENTAL SETUP

1.PIC MICROCONTROLLER

The PIC microcontroller PIC16f877a is one of the most renowned microcontrollers in the industry. This microcontroller is very convenient to use, the coding or programming of this controller is also easier. One of the main advantages is that it can be write-erase as many times as possible because it uses FLASH memory technology. It has a total number of 40 pins and there are 33 pins for input and output.

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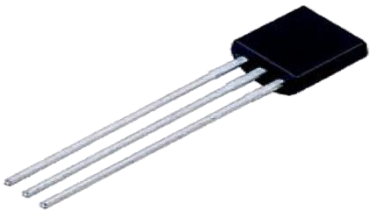
2.MEMS SENSOR

This sensor uses a chip-based technology namely micro-electro-mechanical-system. These sensors are used to detect as well as measure the external stimulus like pressure, after that it responds to the pressure which is measured pressure with the help of some mechanical actions.

3. TEMPERATURE SENSOR

A temperature sensor is a device, typically, a thermocouple or RTD, that provides for temperature measurement through an electrical signal. A thermocouple is made from two dissimilar metals that generate electrical voltage in direct proportion to changes in temperature.



4. L293D DC MOTOR DRIVER

A motor driver is an integrated circuit chip which is usually used to control motor in autonomous robots. Motor drive act as a interface between microcontroller and motor. The most commonly used motor driver IC's are from the l293 series such as L293D, L293NE, etc. thers IC's are designed to control 2DC motor simultaneously

III. REQUIREMENTS

5. SOFTWARE REQUIREMENTS

- MPLAB IDE
- PROTEUS SIMULATOR
- CCS C COMPILER

6. HARDWARE REQUIREMENTS

- PIC MICROCONTROLLER
- GSM
- BUZZER
- DC MOTOR

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- ACCELEROMETER
- MOTOR DRIVER L293D
- USB CABLE
- SWITCH

IV. SPECIFICATION

1.DESIGN

The robot looks like a vehicle the wheel are fit down side of the tray and the circuit placed in the upper part

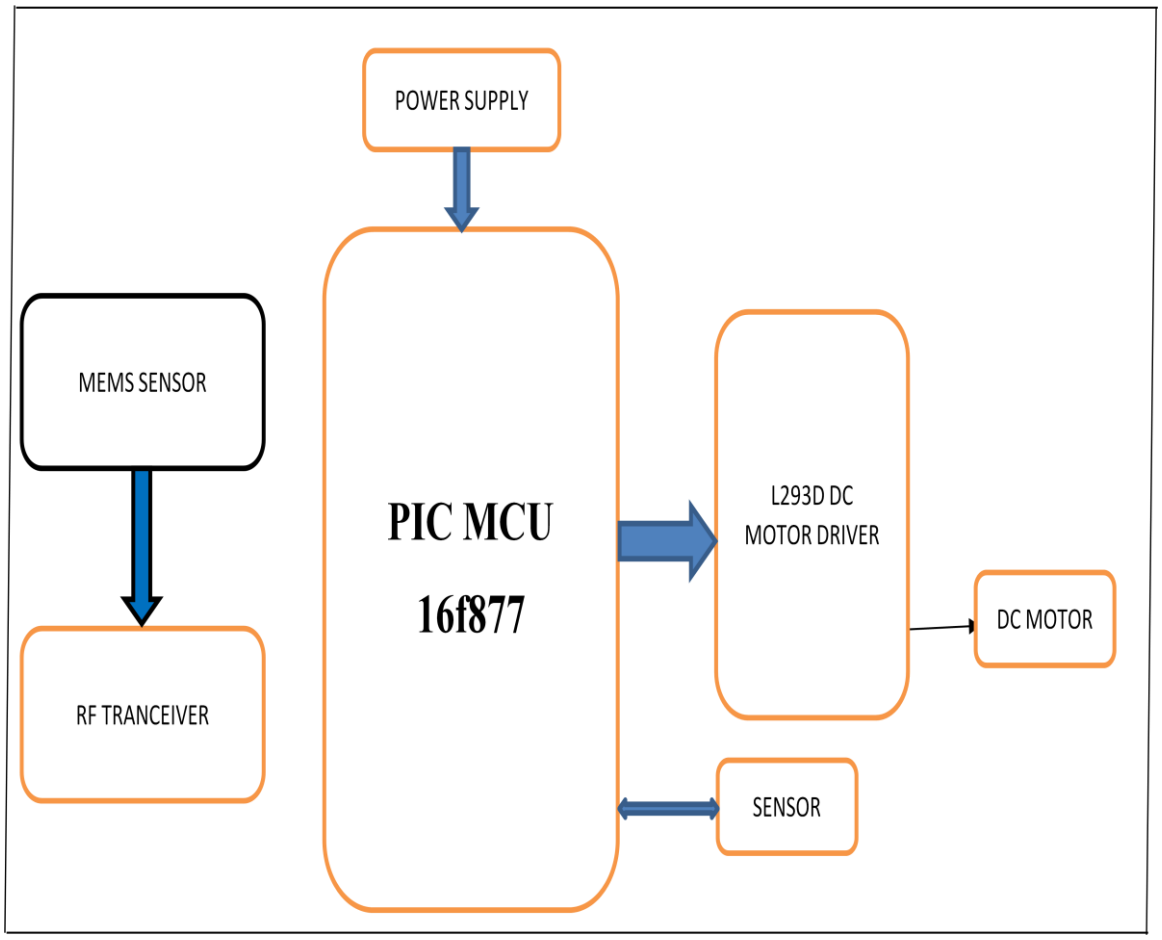
2. **BATTERY**

The robot built for long haul action so that you stay in charge. 1200mAh battery is used

3.FEATURE & DETAILS

- To reduce the cost PIC microcontroller is used instead of ARM microcontrolled PIC microcontroller is a powerful microcontroller
- The robot was created to help the disable people they can control the robot with their hands

V. BLOCK DIAGRAM



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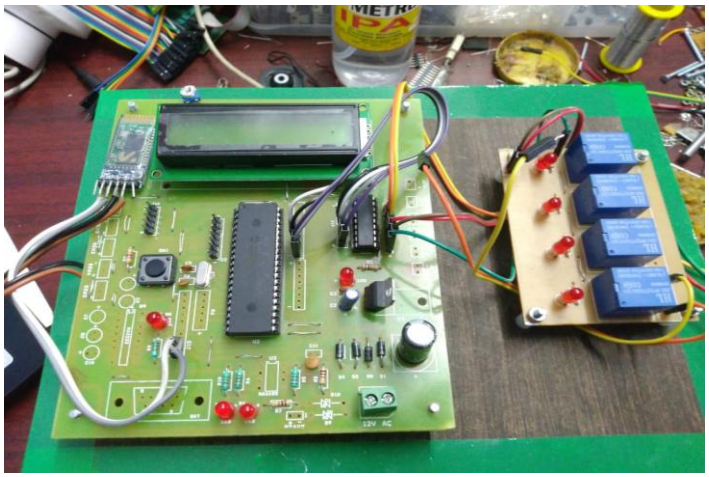
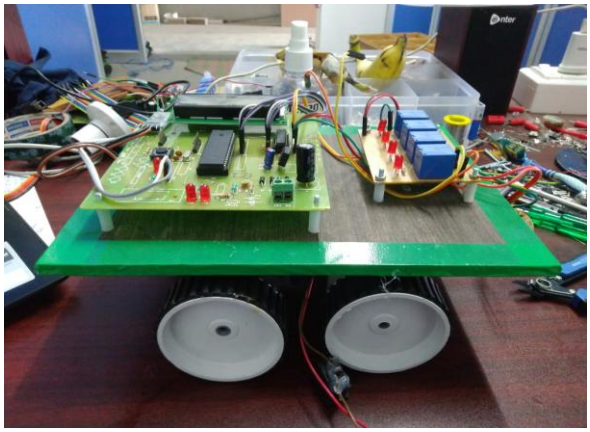
VI.RESULT





VII. MATERIALS NEEDED

S.NO	PARTS	QUANTITY
1	BATTERY CONNECTOR	1
2	VOLT BATTERY	1
3	WHEEL	4
4	USB CABLE	1
5	ROBOT CHASSIS	1
6	WIRE CONNECTION AND CONTROLLER	-

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VIII. ADVANTAGES

- Assisting elderly person
- Monitoring health
- This technology can also be used to send information to guardian

IX. CONCLUSION

Our paper is capable to control the robot for disable people using hand gesture improvements can be made by using various body gesture such eyes gaze, legmovent or head movement accordingly

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