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Implementation of Human Rescue Spy Robot Using Microcontroller

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1. **Abstract**:-

The Main aim of this project is make a rescue robot which allow or help the Rescue team to go through the harsh conditions or may in disasters where it is very difficult to reach and help the banned peoples. Here we are making the computer operated wireless robot which contains Wireless cam, motion sensor. In this we are driving that robot with the help of our Control Module. As we are going forward wireless cam guide us in the direction, but if suppose there is something moving in the back word, then that can be detected by motion sensor. If we find a human body then by measuring its temperature we can decide whether the person needs urgent help or not .

2. **Introduction**:-

A robot is a virtual artificial agent . In practice it is usually an electro-mechanical machine which is guided by computer or electronic programming or mobile . It is capable of doing different tasks . An intelligent spy robot is used to get the confidential details of anybody without putting our lives in danger . In spy robot visual operations are done by camera . Visual information can be recorded and viewed by human directly .

During natural calamities like earthquake or during terrorist attack hostage situation where human cannot enter the crime scene then this robot can move around such a place and provide information to rescue team .

The work system is divided in two ways one is transmitter and another receiver. At transmitter section, the commands are transferred to remote locations to the robot . The commands are said to be forward , reverse , left , right , stop according to command robot wire act for transmitting signal from one end to another end RF technology is used . In this System , Robot acts as a vehicle .

WORKING:-

In this paperwork, the robot is controlled by a Remote-controller. The control module of remote side consists of control switches , microcontroller , transreceiver , tv , buzzer , LCD display.

When we press one of the key of control switches then signal is generated and pass to the microcontroller . a microcontroller then process the signal and send it to the robot via trans reciver.

After receiving command from the trans receiver ,the robot will work according to the sent command , the robot then sent back the appropriate action result to the microcontroller which can be seen by LCD display .

The buzzer will get activated as soon as robot detects any object .

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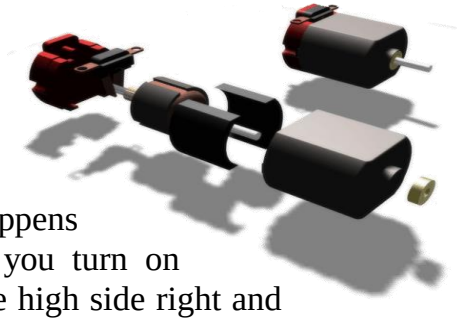
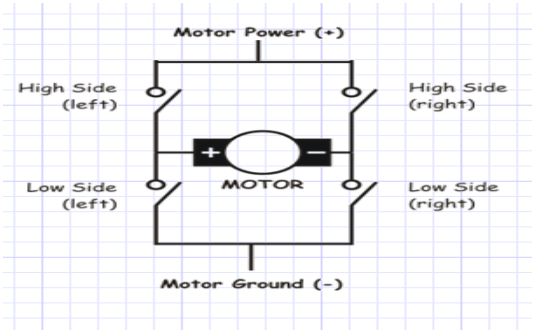
- **H-Bridges: Theory and Practice (L293D)**

- **Introduction**
- A number of web sites talk about H-bridges, they are a topic of great discussion in robotics clubs and they are the bane of many robotics hobbyists. I periodically chime in on discussions about them, and while not an expert by a long shot I've built a few over the years. Further, they were one of my personal stumbling blocks when I was first getting into robotics. This section of the notebook is devoted to the theory and practice of building H-bridges for controlling brushed DC motors (the most common kind you will find in hobby robotics) I've got an image of one below with both as a unit and "expanded" in an exploded view.
- The key fact to note is that there are, in theory, four switching elements within the bridge. These four elements are often called, high side left, high side right, low side right, and low side left (when traversing in clockwise order).

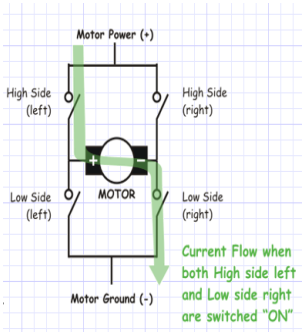
- The switches are turned on in pairs, either high left and lower right, or lower left and high right, but never both switches on the same "side" of the bridge. If both switches on one side of a bridge are turned on it creates a short circuit between the battery plus and battery minus terminals. This phenomena is called shoot through in the Switch-Mode.
- The current flows and the motor begins to turn in a "positive" direction. What happens if you turn on the high side right and low side left switches? You guessed it, current flows the other direction through the motor and the motor turns in the opposite direction.



- Pretty simple stuff right? Actually it is just that simple, the tricky part comes in when you decide what to use for switches. Anything that can carry a current will work, from four SPST switches, one DPDT switch, relays, transistors, to enhancement mode power MOSFETs.



- One more topic in the basic theory section, quadrants. If each switch can be controlled independently then you can do



some interesting things with the bridge, some folks call such a bridge a "four quadrant device" (4QD get it?). If you built it out of a single DPDT relay, you can really only control forward or reverse. You can build a small truth table that tells you for each of the switch's states, what the bridge will do. As each switch has one of two states, and there are four switches, there are 16 possible states. However, since any state that turns both switches on one side on is "bad" (smoke issues forth), there are in fact only four useful states (the four quadrants) where the transistors are turned on.

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High Side Left	High Side Right	Lower Left	Lower Right	Quadrant Description
On	Off	Off	On	Motor goes Clockwise
Off	On	On	Off	Motor goes Counter-clockwise
On	On	Off	Off	Motor "brakes" and decelerates
Off	Off	On	On	Motor "brakes" and decelerates

- The last two rows describe a maneuver where you "short circuit" the motor which causes the motors generator effect to work against itself. The turning motor generates a voltage which tries to force the motor to turn the opposite direction. This causes the motor to rapidly stop spinning and is called "braking" on a lot of H-bridge designs.
- Of course there is also the state where all the transistors are turned off. In this case the motor coasts if it was spinning and does nothing if it was doing.

3.CONCLUSION

The Internet controlled Spy Robot has been aimed to design in such a way that it can fulfil the needs of the military, the police and armed forces. It has countless applications and can be used in different environments and scenarios. For instance, at one scenario it can be used by the armed forces, military purposes, while at another instance it can be used for spy purposes. Also the same spy robot will provide the secret information to the rescue team so they can plan accordingly and help people from hostage situation and terrorist attacks.

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