

Wired Robot System

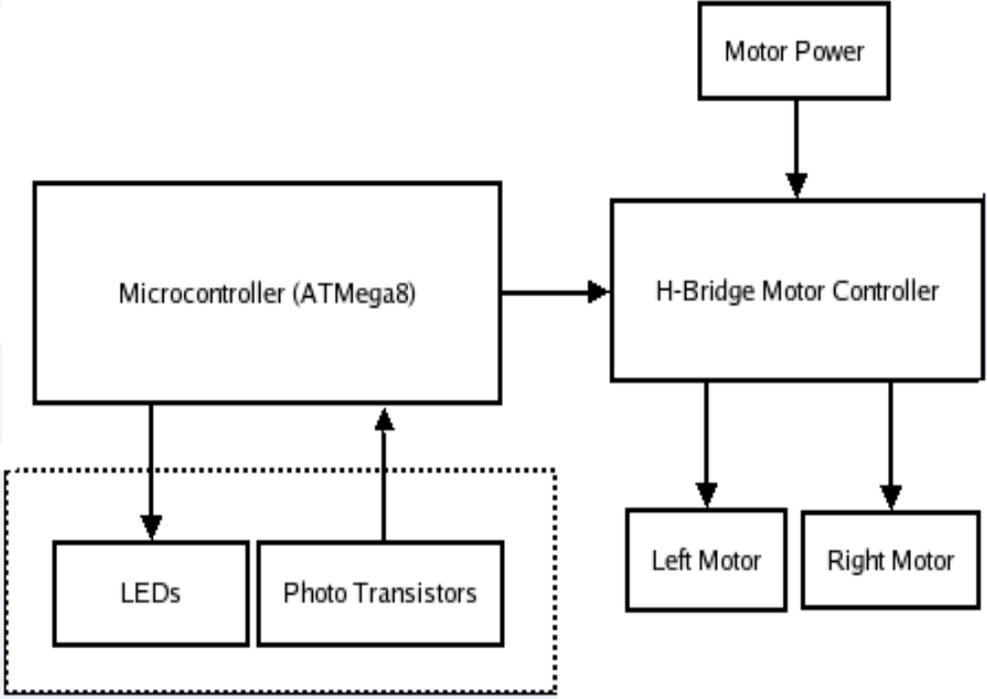
Abstract:

The easiest way to control a vehicle is with a handheld controller physically connected to the vehicle using a cable (i.e. a tether). Toggle switches, knobs, levers, joysticks and buttons on this controller allow the user to control the vehicle without the need to incorporate complex electronics. In this situation, the motors and a power source can be connected directly with a switch in order to control its forward/backwards rotation. Such vehicles usually have no intelligence and are considered to be more “remote controlled machines” than “robots”.

Components List:

Battery (12 volt, 4.5 Ah) -	1nos.
DPDT Switch-	2nos. or 4nos robot gripper
Ribbon wire strip-	3 meters+
DC Geared Motors	4nos 4x4 or 2nos 4x2
Chassis (having holes for motor) -	1
Box	1
Metal strip	12
Wheels	4 nos.
Castor wheel	1nos (4x2)
Soldering wire -	as required

Block diagram:



Working:

Before you start making your robot you need a paper plan. Measure length of the motor (excluding shaft), diameter of shaft of the motor, inner hole diameter of the motor. Draw a rough sketch of the base you need to cut keeping in mind the placement of motors and wheels. Chassis is a mechanical assembly for making a 4 wheel drive platform where you can mount any controller board to drive your bot. This is just the mechanical chassis. We can use 4 DC geared motors, 1 castor and 4 wheels with rubber rings so you can make both variants. Fit the caster wheel at position show in above diagram with 1.5-2 inches (approx.) screw. Fit the dc motor into the holes of chassis and couple the wheel by using screw or rubber tube.

Advantages:

1. The robot is not limited to an operating time since it can be connected directly to the mains.
2. There is no worry about loss of signal.
3. Minimal electronics and minimal complexity.
4. The robot itself can be light weight or have added payload capacity.
5. The robot can be physically retrieved if something goes wrong (very important for underwater robots).