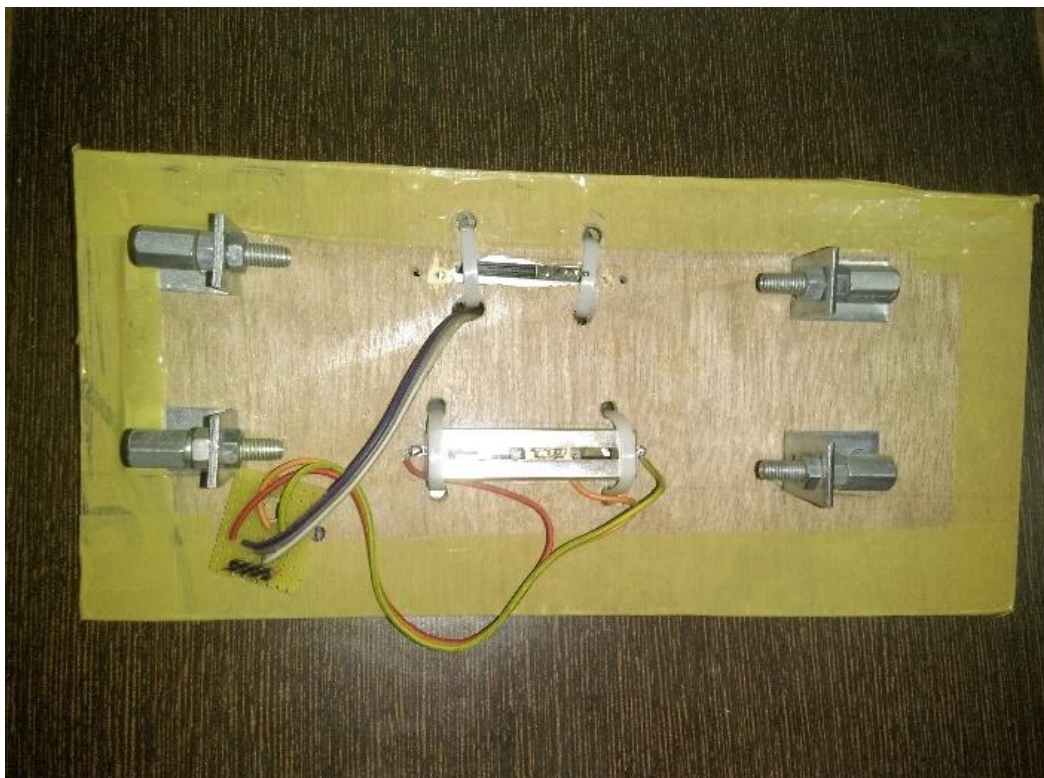## Throttle & Clutch Sensors

- Throttle & Clutch Sensors are built from linear potentiometers, which give a proportional output from linear movement.
- The sensors are placed between the cables connecting the user and the engine.

Gear Position Sensors

- Here Magnetic Sensors (REED SWITCH) are used which give out a signal when a magnet is nearby.
- Multiple such switches are placed in a circular pattern, and these provide signals for the corresponding gear position.
- Using magnets gives a noncontact interface, hence there is no chance of wear & tear on the sensor. This ensures error free operation.

Vehicle Speed:

- An inversion of a mini DC motor is used as a DC generator, with its shaft connected to vehicle speedometer cable.
- The vehicle speed is converted to a directly proportional range of signal from 0 volt to 1 volt for the corresponding vehicle speed of 0 km/h to 90km/h.
- The conversion of the signal to speed is done in the CPU (Arduino Board).