Bluetooth Controlled CamCar

A hardware project

By

Arunima Mandal

&

Tanmoy Taposh Datta

Overview:

This is the robot which can go around 20 meter distance from its controlling point of movement via bluetooth module. And the controlling the movement is done by a bluetooth module attached with the robo and the controlling point is an android mobile. The environment will be captured by the camera attached with it which will live stream the video in our controlling android mobile or pc.

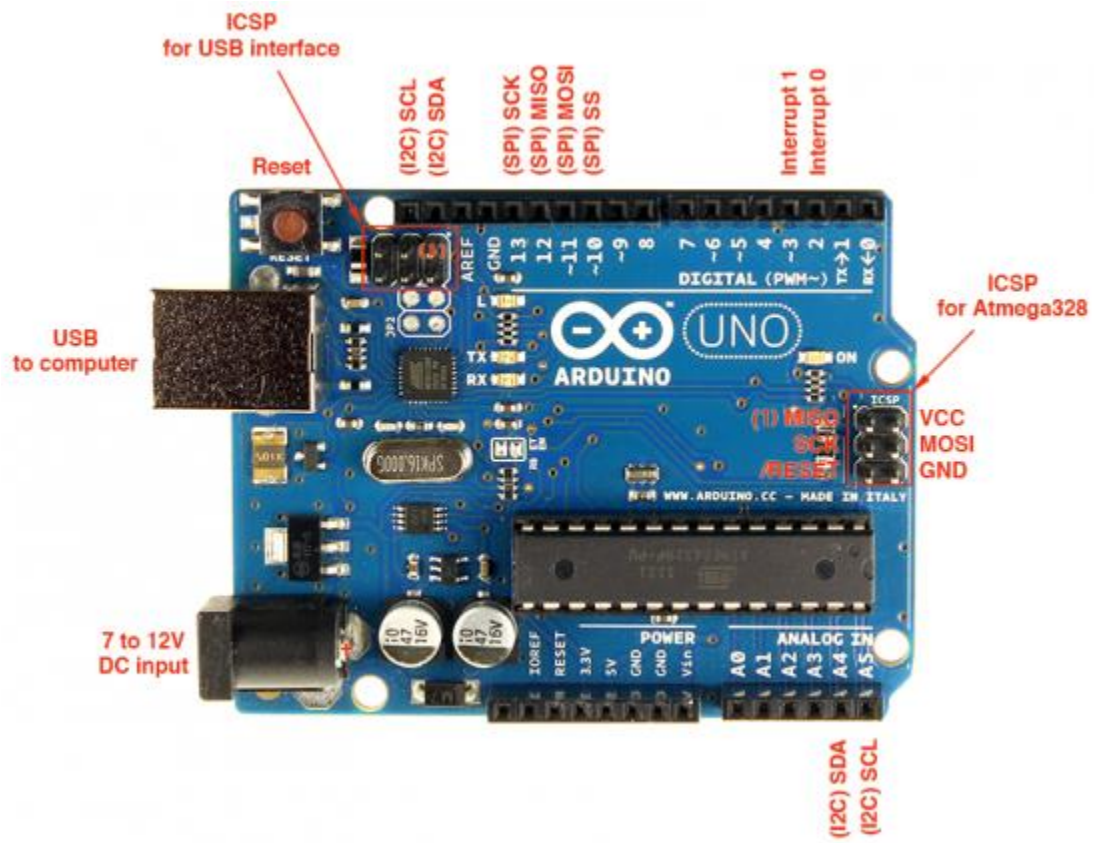
Necessary Equipments:

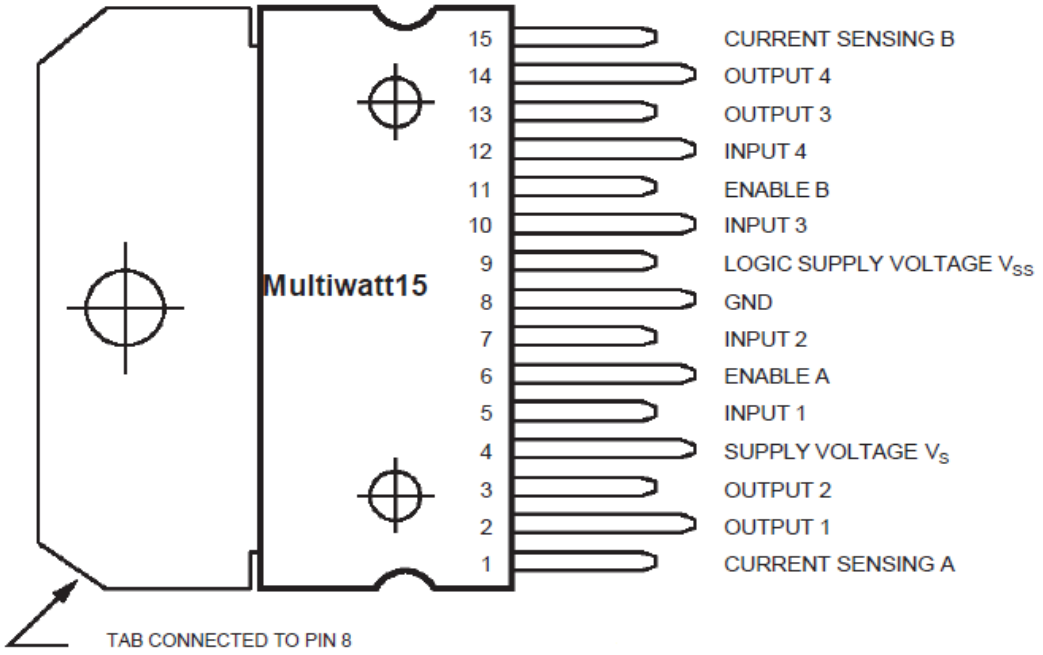
1. Arduino Mega
2. Motor driver L298N
3. DC Motor Metal Gear 300 RPM
4. HC-05 Bluetooth controlling.
5. IP Camera.
6. 4x led for lights.

Working Principle:

- For moving in **forward** direction, both the A and B motor will be moving forward.
- For moving in **backward** direction, both the A and B motor will be moving backward.
- For moving in **left** direction, B motor will stop moving and A will be moving forward
- For moving in **right** direction, A motor will stop moving and B will be moving forward
- And the aimportant part is the live streaming which is done by an **IP Camera**. An **Internet protocol camera**, or IP camera, is a type of digital video camera commonly employed for surveillance, and which, unlike analog closed circuit television (CCTV) cameras, can send and receive data via a computer network and the Internet. Although most cameras that do this are webcams, the term "IP camera" or "netcam" is usually applied only to those used for surveillance.

Pin Diagram:


ICSP
for USB interface
Reset
(I2C) SCL
(I2C) SDA
(SPI) SCK
(SPI) MISO
(SPI) MOSI
(SPI) SS
Interrupt 1
Interrupt 0
USB
to computer
ICSP
for Atmega328
VCC
MOSI
GND
7 to 12V
DC input
(I2C) SDA
(I2C) SCL
DIGITAL (PWM~)
ANALOG IN
POWER
ARDUINO
UNO


Multiwatt15
15 CURRENT SENSING B
14 OUTPUT 4
13 OUTPUT 3
12 INPUT 4
11 ENABLE B
10 INPUT 3
9 LOGIC SUPPLY VOLTAGE V_{SS}
8 GND
7 INPUT 2
6 ENABLE A
5 INPUT 1
4 SUPPLY VOLTAGE V_S
3 OUTPUT 2
2 OUTPUT 1
1 CURRENT SENSING A
TAB CONNECTED TO PIN 8

Main Circuit Diagram:

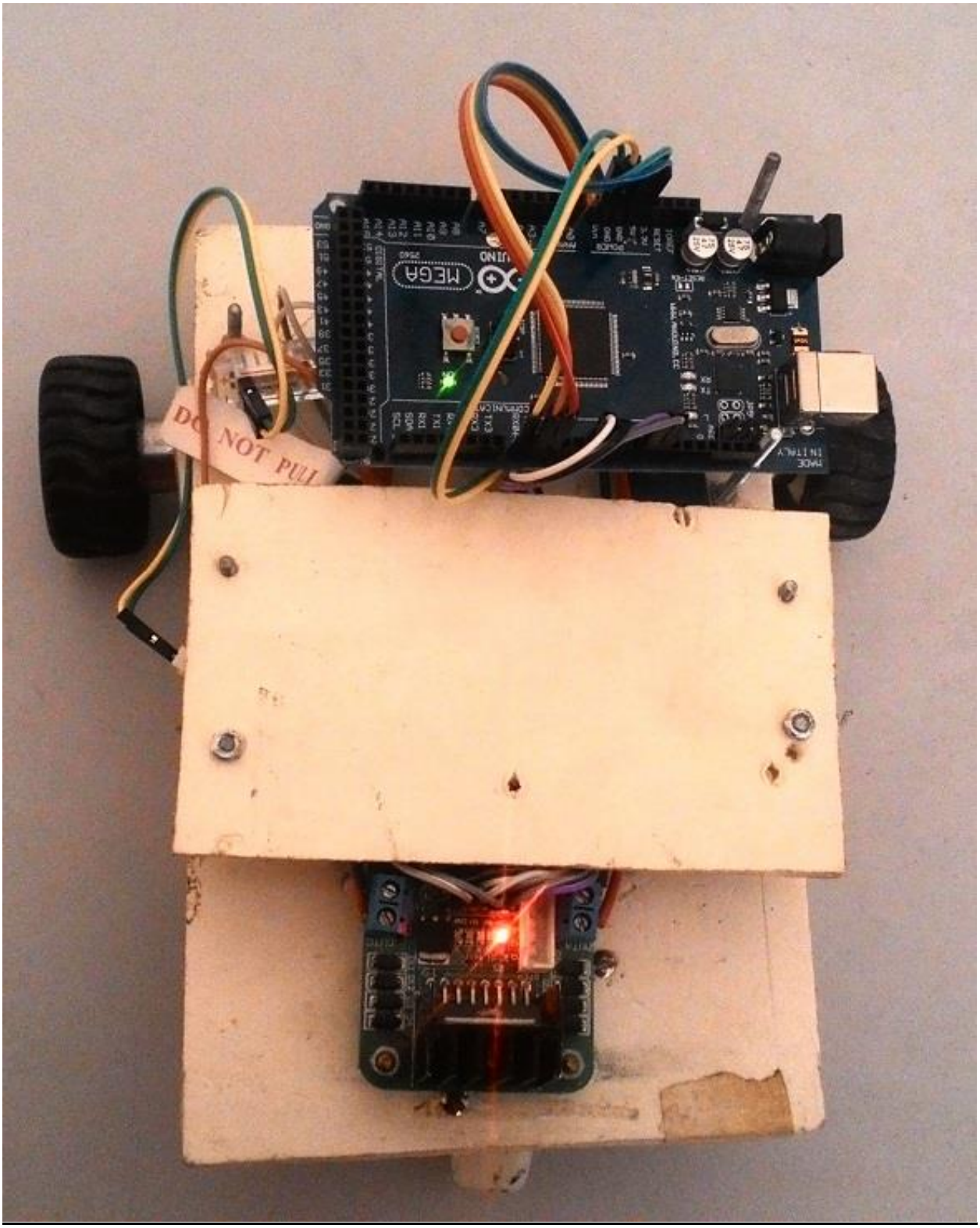


Fig : Our final project

Application:

- **Military & detective purpose:** It can be easily worked as a spy bot.
- **During Natural calamities:** The natural calamities which can't be reached by human or is dangerous for human, then this robot can snatch valuable information.

Conclusion:

From this project we learnt many things which when piece by piece sum up, became a huge experience for us . First of all we learnt the basics of building a robot. Secondly, we learnt how to control the movement of the robot with the help of a Bluetooth module. Then we learnt the use of sensor and working principles of sonar sensor. And finally, capturing the live stream method of the robot in the android mobile. Overall, this was a great learning for us and hoping for the further progress that we can make to this project.