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CONTENTS

| | | |
|----------|-----------------------|----------|
| 1 | Hardware Setup | 1 |
| 2 | Implementation | 1 |

Abstract—A Toy car is controlled using bluetooth and google voice recognition software.

1 HARDWARE SETUP

- 1.1 Assemble the motors, chassis and wheels to build the toy car.
- 1.2 Stick the breadboard to the chassis of the toy car.
- 1.3 Stick a 9V battery to the breadboard and connect the positive and negative terminals to extreme ends of the breadboard.
- 1.4 Stick a 9V battery to the breadboard and connect the positive and negative terminals to extreme ends of the breadboard.
- 1.5 Provide 9V to the supply pin of the Arduino.
- 1.6 Plug the L293D motor driver IC in Fig. 1.6 on the breadboard.

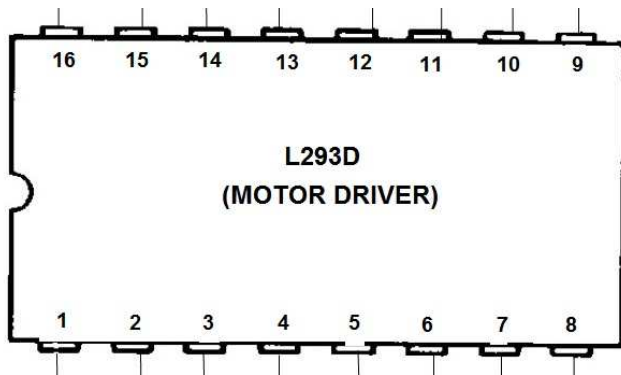


Fig. 1.6

| Power | L293D | | | |
|-------|-------|---|----|----|
| 9V | 1 | 8 | 9 | 16 |
| GND | 4 | 5 | 12 | 13 |

| Arduino | D2 | D3 | D4 | D5 |
|---------|----|----|----|----|
| L293D | 2 | 7 | 10 | 15 |

| Motor | + | | - | |
|-------|---|----|---|----|
| L293D | 3 | 11 | 6 | 14 |

TABLE 1.7

| Arduino | D0 | $\frac{2}{3}$ D1 | 5V | GND |
|---------|----|------------------|-----|-----|
| HC05 | TX | RX | Vcc | GND |

TABLE 1.8

- 1.7 Connect the L293D pins according to Table 1.7.
- 1.8 Connect the HC05 pins according to Table 1.8.

2 IMPLEMENTATION

- 2.1 Dump the following code in Arduino using its IDE.

```
wget https://raw.githubusercontent.com/gadepall/EE1390/master/bot/codes/vcb.cpp
```

- 2.2 Install Google API "Arduino Bluetooth Controller" using google play-store
- 2.3 Open the app and connect to HC-05.
- 2.4 Open voice control section in the app and tap to give following commands.
Left, Right, Forward, Back & Stop

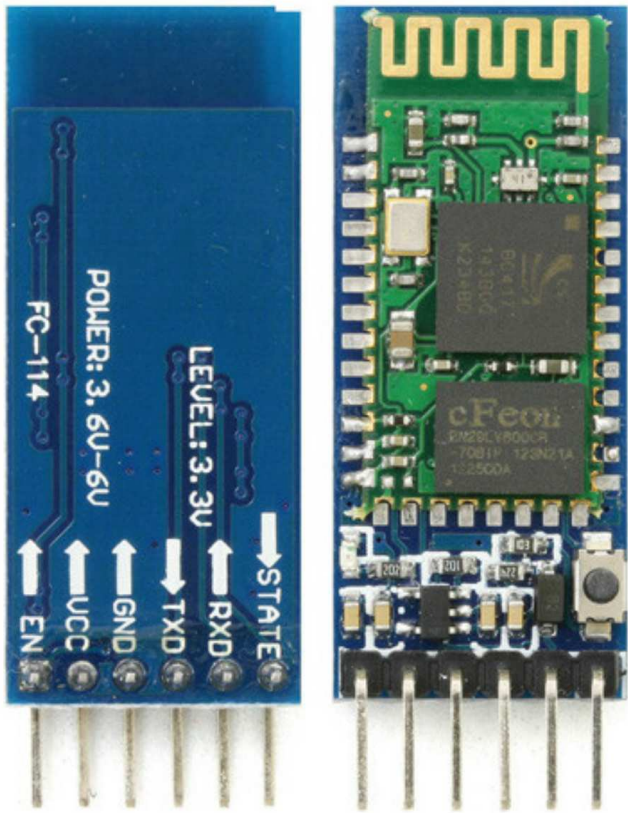


Fig. 1.8: HC05 Bluetooth module

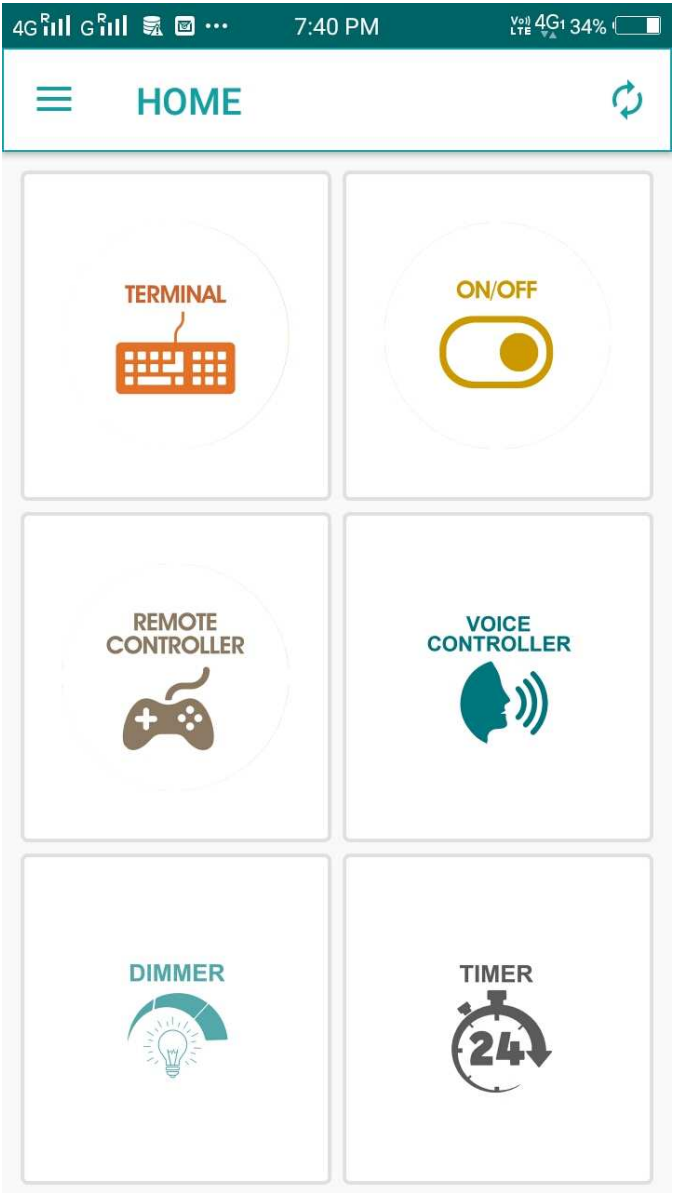


Fig. 2.2