

Mobicar project

Control system and computer project

“Group 54”

January 1, 2018

2nd electrical department

Faculty of Engineering-Ain Shams University

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# Vision:

Smartphone - controlled Arduino 2WD robot car or Bluetooth Arduino robot is a car which can move forward and backward, left and right, change its speed.

# IDEA:

* Controlling RC cars using android application.
* Converting a simple toy to a smart one.

# Objectives:

* Receiving and sending basic control commands via Bluetooth.
* Allow user to create a certain route for the car.
* Allow the child to learn coding through playing.
* Adding extra options for the toy using sensors (ex: object detection, light sensors, line detector ... etc).

# First Phase: “Easy-Driving”

## Components:

Our Hardware component:

1. Arduino UNO-Kit
2. H-bridge Motor drivers AL298
3. Smart Robot Car Chassis Kit with 2 wheels.
4. HC-06 Bluetooth Module.
5. DC Battery (9v) with its holder.
6. DC Motors Driver
7. Android Smart Phone.
8. Jumper Wires (Male to Female)

## Bluetooth Android application to M.C.U:

HC-06 module is an easy to use Bluetooth SPP (Serial Port Protocol) module, designed for transparent wireless serial connection setup.

Serial port Bluetooth module is fully qualified Bluetooth V2.0+EDR (Enhanced Data Rate) 3Mbps Modulation with complete 2.4GHz radio transceiver and baseband. It uses CSR Blue core 04-External single chip Bluetooth system with CMOS technology and with AFH (Adaptive Frequency Hopping Feature). It has the footprint as small as 12.7mmx27mm. Hope it will simplify your overall design/development cycle.

## RC controlled Motion:

To control the car used Android-device with a built-in accelerometer. Tilt forward – car goes forward, tilt to the left – car turns to the left, tilt back – car goes back. Speed of movement or rotation depends on how much you tilt the device. Sensitivity and value of the tilt set in the configuration Android-apps. Also are provided a normal way to control: the buttons on the screen. In addition to all I implemented the touch control. In version 1.2, I added a new type of control: like virtual steering wheel. Total 4 ways to control the RC Car.