

DIY 4-wheel Drive Robot Smart Car Chassis Kits with Speed Encoder For RC Car

https://www.amazon.in/Robocraze-4-wheel-Drive-Chassis-Encoder/dp/B077GNR6WQ?source=ps-sl-shoppingads-lpcontext&ref_=fplfs&psc=1&smid=AJ6SIZC8YQDZX

FlexiGrip 5DOF Bionic Robotic Hand(Unassembled)

<https://robu.in/product/flexigrip-5dof-bionic-robotic-handunassembled/>

Techno-Tirupati; Robotic Prosthetic Hand DIY kit (3D Printed Parts with 1 SG90 Motor for Thumb)

<https://www.amazon.in/Techno-Tirupati-Robotic-Prosthetic-Printed-Parts/dp/B0B9NZCYHM?th=1>

Techno-Tirupati;12 DOF Quadruped Spider Robot Without Motors and Controller.

https://www.amazon.in/Techno-Tirupati-Quadruped-Spider-without-Controller/dp/B0CQ569541/ref=sr_1_4?dib=eyJ2IjoiMSJ9.kiCOjc-gMVFpcQu2UfdxD51GmGzwDaEeYXVxz6-BqjJDiM0jxQupG0kOinF0Cbx6_AAXkMLCtUjZ-d46ZZtWiNG-FQwQEN-MeFfuargRYqkzu9rtHmqX0sTqUA-GYb1vZDCUD2u-aKn6famINt1O4w.NKNnpKMgRJzD_W5-0TP-

WbHTzFYDBB1vJvvJmu8TkR0&dib_tag=se&qid=1742622995&sr=8-4&srs=56528119031

Techno-Tirupati ; Building Dreams Techno-Tirupati 4-Legged Walking Robot; Quadruped Spider (3D Printed Parts with Screws only)

https://www.amazon.in/Techno-Tirupati-4-Legged-Walking-Quadruped-Printed/dp/B0B9K21584/ref=sr_1_7?dib=eyJ2IjoiMSJ9.kiCOjc-gMVFcQu2UfdxD51GmGzwDaEeYXVxz6-BqjJDIM0jxQupG0kOinF0Cbx6_AAAXkMLCtUjZ-d46ZZtWiNG-FQwQEN-MeFfuargRYqkzu9rtHmqX0sTqUA-GYb1vZDCUD2u-aKn6famINt1O4w.NKNnpKMgRJzD_W5-0TP-WbHTzFYDBB1vJvvJmu8TkR0&dib_tag=se&qid=1742622995&sr=8-7&srs=56528119031&th=1

kit4curious curious arm ardno compatible smart robotic arm with 4 servo- Multi color

https://www.amazon.in/kit4curious-curious-compatible-robotic-servo/dp/B07D5TVNQZ/ref=pd_sbs_d_sccl_2_6/260-5598134-7518407?pd_rd_w=CssGx&content-id=amzn1.sym.1c49e0bd-a596-4300-898f-6bfe8f62ed47&pf_rd_p=1c49e0bd-a596-4300-898f-6bfe8f62ed47&pf_rd_r=FQV0924Y2EXCC9BZAFV5&pd_rd_wg=xbQgS&pd_rd_r=61445434-75aa-4e69-92ca-3a57a7bafb4a&pd_rd_i=B07D5TVNQZ&pssc=1

Kit4Curious Acrylic 6 Wheel Drive Curious Chassis for DIY Robotics (Black)
Visit the Kit4Curious Store

https://www.amazon.in/dp/B07D5T2DN3/ref=sspa_dk_detail_3?pd_rd_i=B07D5T2DN3&pd_rd_w=2Lbn3&content-id=amzn1.sym.9f1cb690-f0b7-44de-b6ff-1bad1e37d3f0&pf_rd_p=9f1cb690-f0b7-44de-

b6ff-1bad1e37d3f0&pf_rd_r=B8Y0QNEAW7JPH8NAXNV2&pd_rd_wg=Pf2yt&pd_rd_r=32ea7596-582d-4042-ac83-917f8f13a34c&sp_csd=d2lkZ2V0TmFtZT1zcF9kZXRhaWxkdGhlbWF0aWM&th=1

Kit4Curious® Super Invention Science Lab Kit - Educational Learning Solar Electric Science Project DIY STEM Hobby Multipurpose kit with Base and Booklet

https://www.amazon.in/Kit4Curious%C2%AE-Super-Invention-Science-Lab/dp/B084V6Z9MB?ref_=ast_sto_dp&th=1

kit4curious curious arm ardno compatible smart robotic arm with 4 servo- Multi color

https://www.amazon.in/kit4curious-curious-compatible-robotic-servo/dp/B07D5TVNQZ/ref=pd_sbs_d_sccl_2_6/260-5598134-7518407?pd_rd_w=HJ0wS&content-id=amzn1.sym.1c49e0bd-a596-4300-898f-6bfe8f62ed47&pf_rd_p=1c49e0bd-a596-4300-898f-6bfe8f62ed47&pf_rd_r=43YGTZ8VNHM07H9CBHWH&pd_rd_wg=fvOdz&pd_rd_r=a0eaf48f-c719-42bf-9c73-cd2efe040307&pd_rd_i=B07D5TVNQZ&psc=1

Robotic Chassis for 4 Wheel Drive (4WD) - Fine Laser Cut on Imported Acrylic 3mm Sheet with 3D Printed Parts, Board Compatible Holes, Two Layers of Plateform, Servo Mount Holes, Ultrasound Mount

https://www.amazon.in/dp/B0DS635ZPR/ref=sspa_dk_detail_5?psc=1&pd_rd_i=B0DS635ZPR&pd_rd_w=Ka0wQ&content-id=amzn1.sym.413ef885-ae1b-472f-afa4-d683cda6ad0d&pf_rd_p=413ef885-ae1b-472f-afa4-d683cda6ad0d&pf_rd_r=GHTTKGM248AR01ZHQNTZ&pd_rd_wg=3IFVu&pd_rd_r=af5745a1-8afd-4008-a8ae-5e1cec016177&s=industrial&sp_csd=d2lkZ2V0TmFtZT1zcF9kZXRhaWw

Techno-Tirupati; Robotic Prosthetic Hand DIY kit (3D Printed Parts with 1 MG90 and 4 MG995 Motors)

https://www.amazon.in/Techno-Tirupati-Robotic-Prosthetic-Printed-Parts/dp/B0B9NWBVGS/ref=pd_sbs_d_sccl_2_3/260-5598134-7518407?pd_rd_w=2HUsa&content-id=amzn1.sym.1c49e0bd-a596-4300-898f-6bfe8f62ed47&pf_rd_p=1c49e0bd-a596-4300-898f-6bfe8f62ed47&pf_rd_r=AKZWC990BGBQWNFERY4J&pd_rd_wg=Q5vQN&pd_rd_r=08810b91-f24e-4b3f-9b3e-0988a77dc07a&pd_rd_i=B0B9NZCYHM&th=1

Here are 12 projects, ranging from basic to advanced, that will help you progress from working with LEDs to LCDs, servos, and stepper motors.

Basic Level

LED Blinking (Hello World of Electronics)

Use an Arduino to blink an LED at a set interval using the `digitalWrite()` function.

Components: LED, resistor (220Ω), Arduino.

Traffic Light System

Simulate a traffic light with red, yellow, and green LEDs that change in sequence.

Components: 3 LEDs, resistors, Arduino.

LED Chaser (Knight Rider Effect)

Control multiple LEDs in a sequential pattern like the Knight Rider light effect.

Components: 8 LEDs, resistors, Arduino.

Intermediate Level LCD Display with Arduino

Display text on a 16x2 LCD screen using an I2C module.

Components: 16x2 LCD, I2C module, Arduino.

Button-Controlled LCD Display

Use push buttons to change messages on an LCD screen.

Components: 16x2 LCD, push buttons, Arduino.

Servo Motor Control with Potentiometer

Control a servo's angle using a potentiometer.

Components: Servo motor, potentiometer, Arduino.

Temperature Display on LCD (DHT11 Sensor)

Read temperature & humidity from a DHT11 sensor and display it on an LCD.

Components: DHT11, LCD, Arduino.

Advanced Level

Remote-Controlled Servo Motor (IR Sensor)

Use an IR remote to move a servo motor to different positions.

Components: IR sensor, IR remote, servo motor, Arduino.

Stepper Motor Control (ULN2003 or A4988 Driver)

Rotate a stepper motor forward and backward using Arduino.

Components: Stepper motor (28BYJ-48 or NEMA 17), ULN2003 driver, Arduino.

Joystick-Controlled Servo Motor

Move a servo motor using a joystick module.

Components: Joystick module, servo motor, Arduino.

Stepper Motor with LCD & Rotary Encoder

Control stepper motor speed and direction using a rotary encoder and display values on an LCD.

Components: Stepper motor, rotary encoder, LCD, Arduino.

Robotic Arm with Multiple Servos

Control a robotic arm with multiple servo motors using a joystick or buttons.

Components: Servo motors, joystick module, Arduino.

These projects will gradually improve your skills in working with LEDs, LCDs, servos, and stepper motors. Do you need circuit diagrams or code samples for any of them? ☒

You said:

Basic Level: LED & Display Control
Bluetooth-Controlled LED (HC-05 Module)

Control an LED using a smartphone via Bluetooth.

Components: Arduino, HC-05 Bluetooth module, LED, resistor, smartphone (with Bluetooth terminal app).

WiFi-Controlled LED (ESP8266/NodeMCU)

Turn an LED on/off using a web server hosted on the ESP8266.

Components: ESP8266/NodeMCU, LED, resistor.

Blynk App LED Control (WiFi IoT)

Control an LED using the Blynk app via the internet.

Components: ESP8266/NodeMCU, Blynk app, LED.

Intermediate Level: Sensors & Actuators DHT11 Temperature & Humidity Monitor (Blynk IoT)

Display real-time temperature and humidity on the Blynk app.

Components: ESP8266/NodeMCU, DHT11 sensor, Blynk app.

Servo Motor Control via Bluetooth (HC-05 & Android App)

Move a servo motor using an Android app over Bluetooth.

Components: Arduino, HC-05, servo motor, Android app.

WiFi-Based Stepper Motor Control (ESP8266 & Web Server)

Control a stepper motor using a webpage hosted on the ESP8266.

Components: ESP8266, stepper motor (28BYJ-48), ULN2003 driver.

MQTT-Based LED & Sensor Data (NodeMCU & Cloud)

Use MQTT to send/receive messages to control an LED and monitor a sensor remotely.

Components: ESP8266, MQTT broker (e.g., HiveMQ, Mosquitto), LED, DHT11.

Advanced Level: Full IoT Applications

Home Automation with Blynk (WiFi & Relay Control)

Control home appliances (lights, fan) using the Blynk app.

Components: ESP8266/NodeMCU, relay module, AC appliances.

Smart Door Lock with Bluetooth (HC-05 & Servo Motor)

Unlock a door using a password from a mobile app over Bluetooth.

Components: Arduino, HC-05, servo motor, keypad, LCD.

WiFi-Based Smart Irrigation System (IoT & MQTT)

Monitor soil moisture and control water flow using MQTT.

Components: ESP8266, soil moisture sensor, water pump, MQTT broker.

GPS Tracker with IoT (ESP32 & Google Maps API)

Track location in real-time and send it to a web dashboard.

Components: ESP32, GPS module, Google Maps API.

IoT-Based Security Camera with ESP32-CAM & Blynk

Stream live video feed to a mobile app and send alerts on motion detection.

Components: ESP32-CAM, PIR sensor, Blynk app.

These projects will help you master Bluetooth, WiFi, Blynk, MQTT, and IoT concepts step by step. Let me know if you need circuit diagrams or code samples! ☒