

4 Dof Robotics Arm.

About This Project:

In this project, we will create a 4 dof robotic arm that will be controlled by an android apps. Robotic arms are widely used in industries, manufacturing lines and other industrial purposes. Robotic arms are used to implement complex industrial automation functionality which only humans can achieve. These functionalities include picking up a part and placing it horizontally into another machine or picking parts and placing it in packing boxes and more. So here we propose the design and fabrication of a fully android controlled automated robotic arm that can automate various industrial tasks. Our system consists of an assembly of mounts and parts designed to hold motors in place in order to achieve desired movement. Also it consists of a gripper designed with gear teeth in order to achieve gripping function as per motor rotation. The system consists of 4 Servo motors needed to achieve the desired movement. A controller provided with it allows controlling the movement of the circuit according to the android apps command. This mechanism helps in understanding the working and control flow of industrial robotic arms design and fabrication processes. 4 DOF Robot Arm Kit is a robotic arm system that has four degrees of freedom and a gripper to manipulate objects in the environment. The servo motors that control the arm links are included in the pack. To start using the robotic arm, the only thing you have to do is to use a microcontroller system like Arduino and write a program that controls the servo motors. The mechanic links of the robotic arm is built using hard aluminum brackets in different shapes. It is pretty easy to connect servo motors and brackets together to build the robotic arm. Once saved with the instructions through the apps, it can automatically do the job again according to the instructions.

Block Diagram:

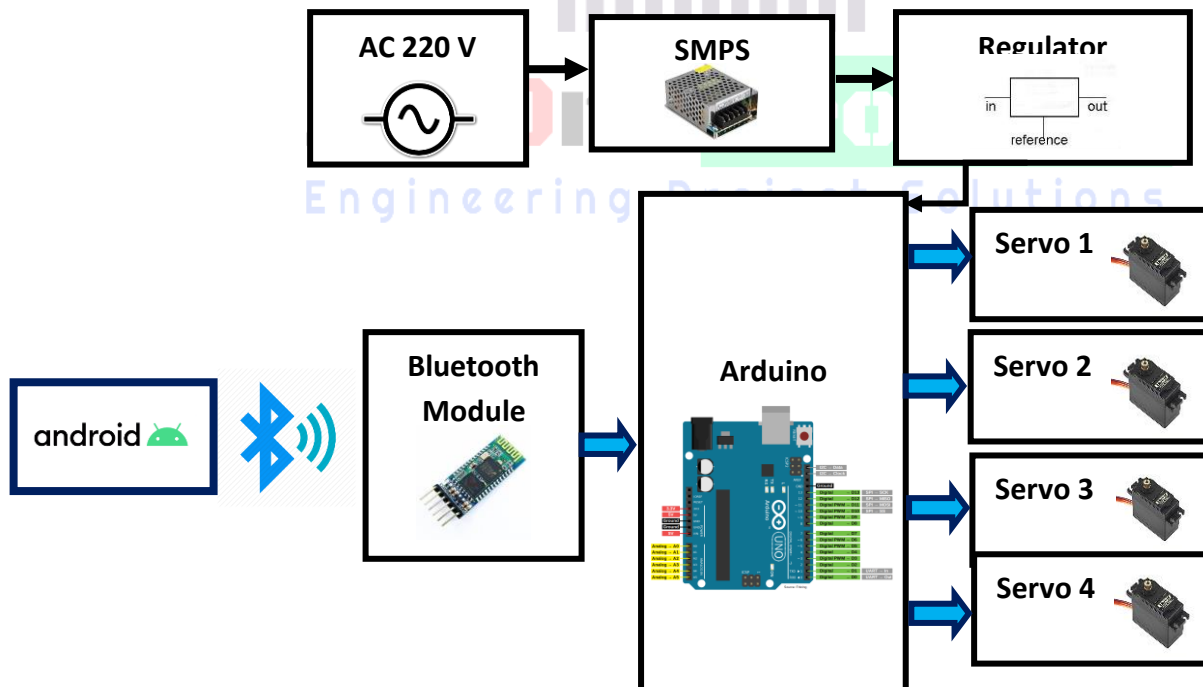


Figure: Block Diagram of 4 Dof Robotic Arm.

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Required Instrument:

- Arduino.
- Bluetooth Module.
- Servo Motor.
- Battery/SMPS.
- Switch.
- 4Dof Robotic Arm.

Advantages:

- Consistency of performance.
- 24/7 continuous working.
- Reduced amount of operator errors.
- Product Pick and place automatically.
- Robotic workers never get tired.
- Can be made to perform even the most dangerous tasks without concern.

Applications:

- Industries for assembly, process automation, pick & place.
- Medical applications.
- Hazardous environments.
- PCB manufacturing units.
- Notable robotic arms and low cost robotic arms
- Pick and place robotic arms can be used as a good teaching aid

N.B: Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.

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