**OVERVIEW**

* A Robot is an electro-mechanical system that is operated by a computer program.
* Robots can be autonomous or semi-autonomous. An autonomous robot is not controlled by human and acts on its own decision by sensing its environment.
* Some of the most commonly used control systems are voice recognition, tactile or touch controlled and motion controlled.
* One of the frequently implemented motion-controlled robot is a Hand Gesture Controlled Robot.
* In this project, a hand gesture-controlled robot is developed using MPU6050, which is a 3-axis Accelerometer and 3-axis Gyroscope sensor and the controller part is Arduino Nano.
* Instead of using a remote control with buttons or a joystick, the gestures of the hand are used to control the motion of the robot.
* The project is based on wireless communication, where the data from the hand gestures is transmitted to the robot over RF link (RF Transmitter – Receiver pair).

**Principle of Hand Gesture Controlled Robot**

* In order to understand the principle of operation of Hand Gesture Controlled Robot, let us divide the project into three parts.
* The first part is getting data from the MPU6050 Accelerometer Gyro Sensor by the Arduino. The Arduino continuously acquires data from the MPU6050 and based on the predefined parameters, it sends a data to the RF Transmitter.
* The second part of the project is the Wireless Communication between the RF Transmitter and RF Receiver. The RF Transmitter, upon receiving data from Arduino (through the Encoder IC), transmits it through the RF Communication to the RF Receiver.
* Finally, the third part of the project is decoding the Data received by the RF Receiver and sending appropriate signals to the Motor Driver IC, which will activate the Wheel Motors of the Robot.