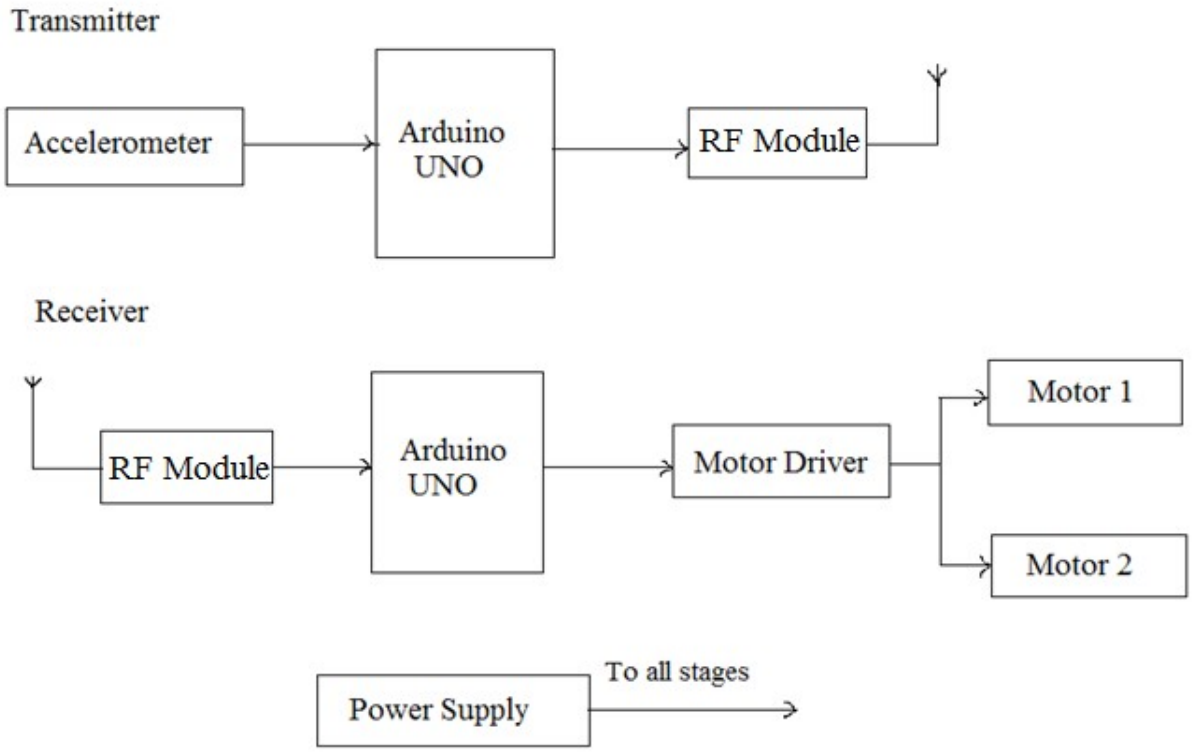
Abstract

Generally, robots are programmed to perform specific tasks which humans cannot. To increase the use of robots where conditions are not certain such as firefighting or rescue operations, robots can be made which follow the instruction of human operator and perform the task. In this way decisions are taken according to the working conditions by the operator and the task is performed by the robots. Thus, we can use these robots to perform those tasks that may be harmful for humans. This project describes the gesture control robot which can be controlled by your normal hand gesture. It consists of mainly two parts, one is transmitter part and another is receiver part. The transmitter will transmit the signal according to the position of accelerometer and your hand gesture and the receiver will receive the signal and make the robot move in respective direction. RF communication is used to wirelessly control the robot.

Block Diagram



The accelerometer records the movement in 3 axes. The voltage dropped across the analog pins of the microcontroller is converted to digital and transmitted wirelessly via RF. The encoder of the transmitter chip converts the parallel data into serial output and control signals are transmitted at 433 MHz. At the receiver end there is a RF receiver which receives the control signals and the decoder chip converts the serial data into parallel. These control signals are taken by the microcontroller and used to drive a motor driver IC which is used to move the two dc motors in forward, backward, left and right directions. The Arduino does not have sufficient current to drive the motors. So a motor driver IC is used.