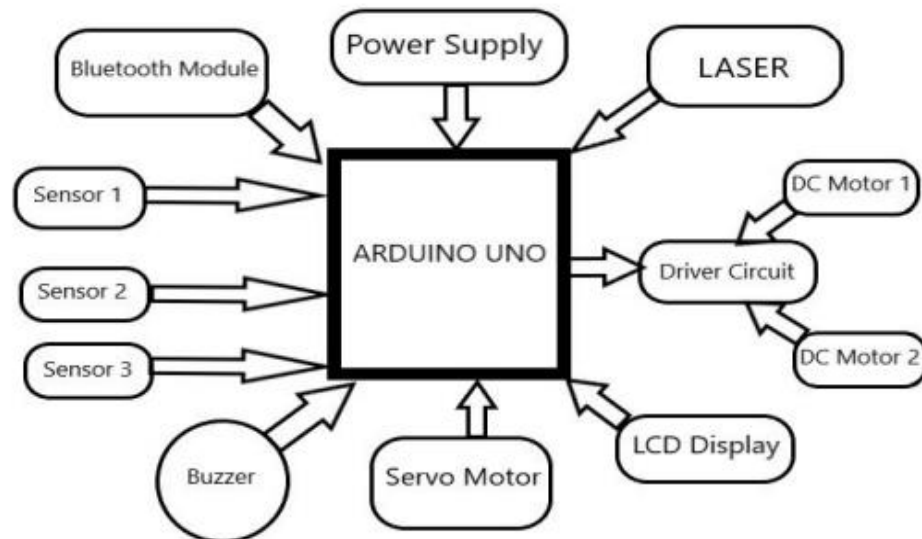


PROPOSED BLOCK DIAGRAM



Working methodology

An ultrasonic module is connected to a microcontroller from the 8051 series in this system. A transmitter and receiver are employed in an ultrasonic transducer. The item reflects the sent waves back to the transducer, which receives them again. Taking into account the velocity of sound, the total time taken from sending the waves to receiving them is estimated. The distance is then calculated by a microcontroller programme and shown on a liquid crystal display screen connected to the microcontroller. The circuit is used to receive 40 KHz reflected signals from the missile object, feed them into a microcontroller programme, and turn on the necessary load while the programme is being executed. When the ultrasonic receiver sends a signal to the microcontroller, it activates the door cannon by triggering the gate of a MOSFET via a transistor or relay. The sensor is attached to the antenna and rotated and operated by a servo motor in a 180-degree rotation. If a target is discovered within the detection range, the programme will direct the launcher to the closest detected target and fire, applying a laser beam to it.

To detect missile objects, the suggested system uses an ultrasonic module connected to an Arduino family microcontroller. On the same module, an ultrasonic transducer with a transmitter and receiver is employed. Sound waves are produced by the ultrasonic transducer. The item reflects the sent sound waves back to the transducer, which receives them again. Taking into account the velocity of sound, the total time taken from sending the waves to receiving them is estimated. The distance is then calculated and shown on a microcontroller-interfaced liquid crystal display. When the microcontroller gets the signal from the ultrasonic receiver, it activates the door cannon by triggering the laser beam gate.