

ASSIGNMENT -1

AUTOMATED GATE CONTROLLING SYSTEM

Automatic gate controlling(open and close), using servo and ultrasonic sensor.

Consideration: Consider the ultrasonic sensor, which is mounted over a disc (controlled over servo motor) for detecting in a particular direction. This setup is built in the gate, initialing the sensor is in the direction for detecting the vehicle. Once the sensor senses the vehicle, the gate opens. Then the direction of the sensor is changed in the direction to found the obstacle is there in the entry path, if there is no obstacle the gate will be closed (i.e. the vehicle is passed the gate or there is no obstacle in order to close the gate).

Simulation consideration: - Initially if the vechile is detected within 2.5m away from the gate, gate opens(as an identification the led will glow), - once the gate is opened(led glow). consider now the sensor is detecting for obstacle in the entry path, if there is no obstacle (detection is not founded upto 3m), close the gate.

Procedure:

1. Initially keep the obstacle within 250cm in the ultrasonic sensor.
2. Sensor detects vehicle then the gate opens (motor is driven in clockwise direction), as an indication led glows for about 5 secs (assume that now the sensor is in the direction for obstacle detection) ,
3. Now keep the obstacle away from 300cm in the ultrasonic sensor(once the led on),
4. Then the gate closes(motor is driven in anticlockwise direction).

Tinkercad link:

https://www.tinkercad.com/things/2rjFcHHz8RI-assignment-16922/editel?sharecode=-uIAMIDOCWlXupSx55OjsivSZ_61y_H7u1oWpp376Q4