ABSTRACT

IOT BASED-SMART DUSTBIN helps to create a cleaner, safer, more hygienic environment and enhanced operational efficiency while reducing management costs, resources, and road-side emissions. The Smart Bin is ideal for busy locations such as campuses, theme parks .

COMPONENTS :ARDUINO-ide, Servo Motor, Power supply ,connecting wires, dustbin . These components help in opening the lid, on detection of any object and also sending the notification in the form of LED.

-Smart Dustbin works on the principle of object detection using an ultrasonic sensor.

Application Areas

--Smart Bins help to create a cleaner, safer, more hygienic environment and enhanced efficiency while reducing management costs, resources.

--A SMARTER BIN, FOR A SMARTER CITY :Managing our waste in a smarter manner is hugely important to the quality of our daily lives, and a pioneer of innovative smart city solutions, is contributing to improving inefficient waste management with Smart Bins.

--MORE INNOVATIONS THAT ARE MAKING OUR LIVES BETTER The smarter management of waste is just one area that Guardforce is working in to make our lives, better, safer and more convenient.

Tools--Technology--Components Used

1

TOOLS:
Dustbin, ARDUINO-IDE, Servo Motor, Ultrasonic Sensor, Connecting wires.

2

TOOLS FUNCTIONING:
-- Ultrasonic sensor to detect the human sense
--Servo Motor helps in opening the lid of the dustbin.
--ARDUINO developing board to do all the processing.

3

--Software for simulation is ARDUINO-IDE
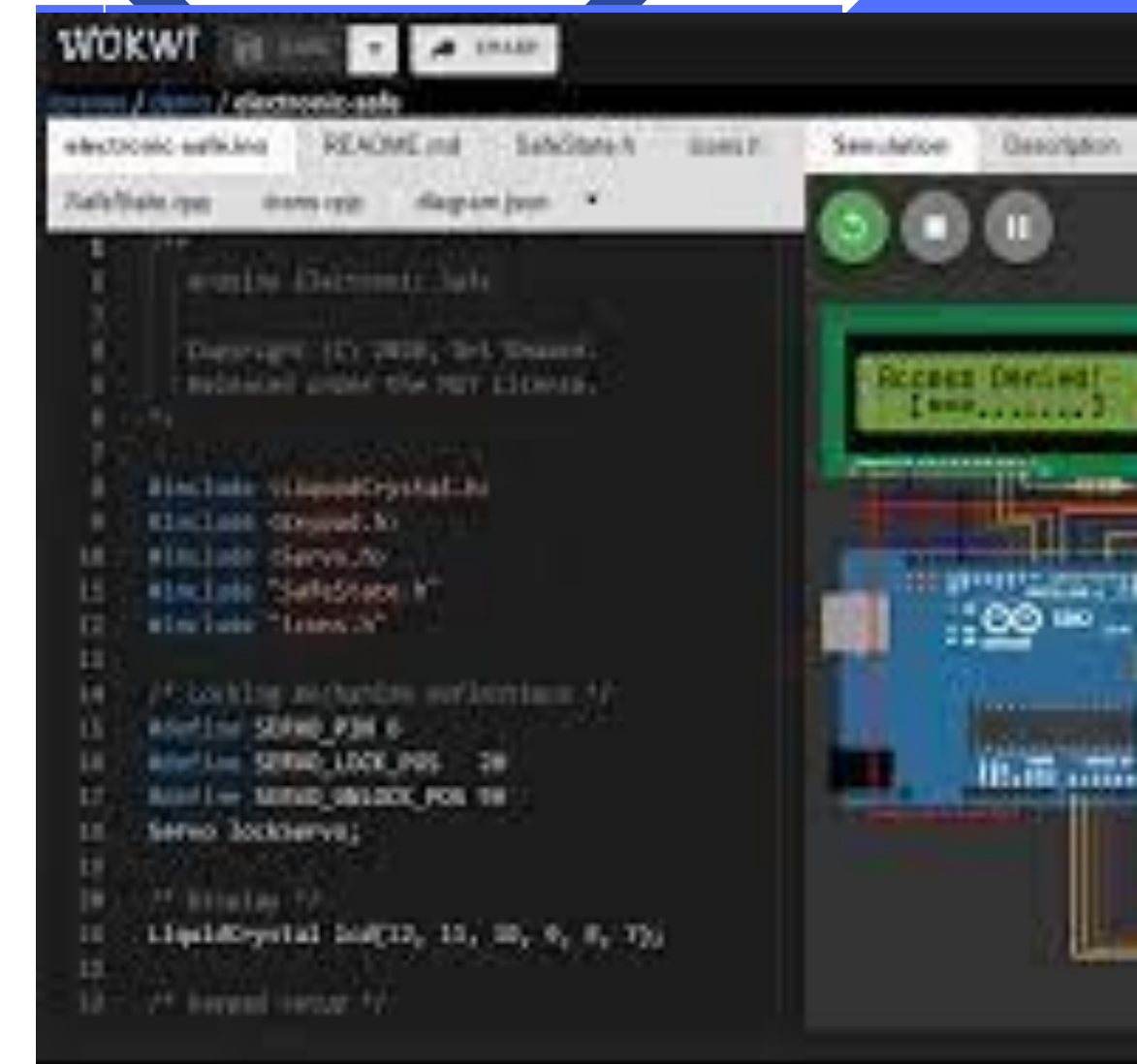
- TECHNOLOGY USED AND FEATURES--
  WOKWI—SIMULATOR

WOKWI IA AN ONLINE ELECTRONICS SIMULATOR.WE CAN USE IT TO SIMULATE BOARDS LIKE: ARDUINO,ESP32,AND ARDUINO UNO.

~We can simulate projects which can be connected to internet via HTTP,NTP and other protocols.

~Simulator can work on microcontroller projects from the browser, no hardware components required.

~Through this built-in visual logic analyser we can capture the digital signals in simulation.

~Multiple boards , motors, sensors and many more are available in simulator
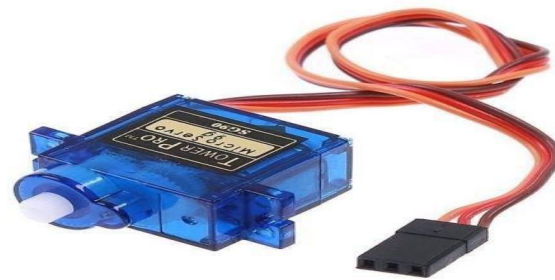
TECHNICAL COMPONENTS :

1
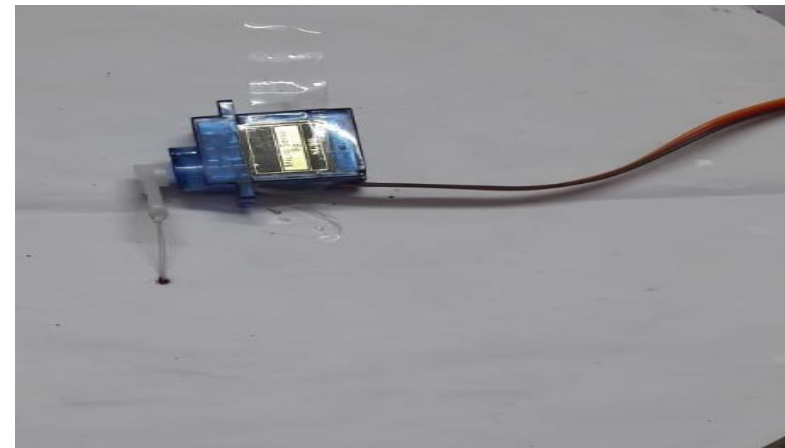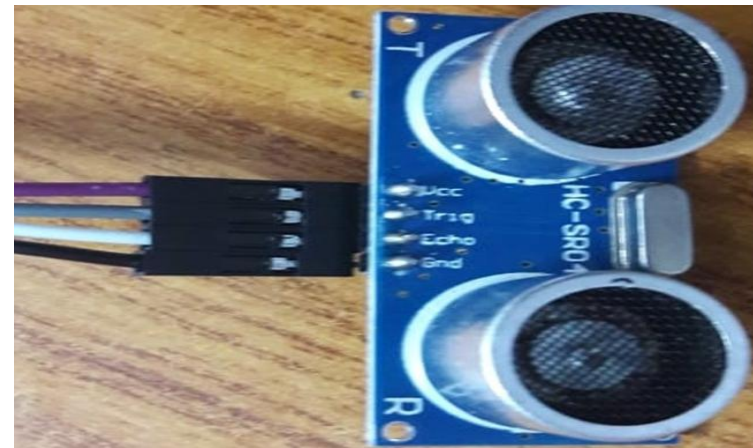ARDUINO

2
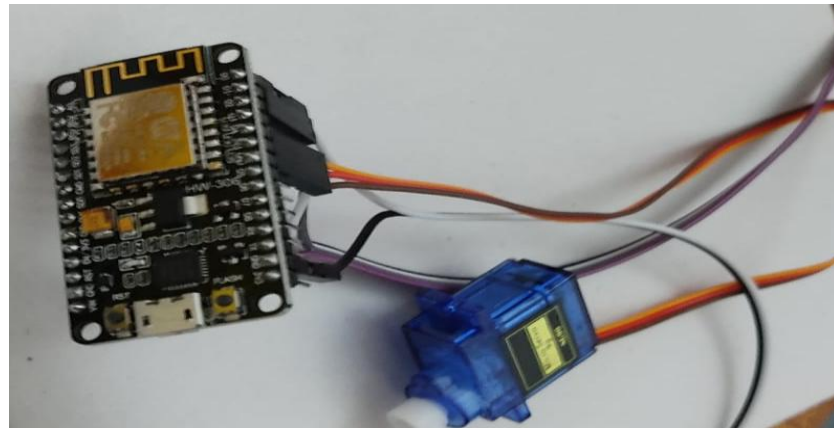JUMPER WIRES

3
SERVO MOTOR

ULTRASONICSENSOR

DEMONSTRATING OF CONNECTIONS

DEMONSTRATING PICTURES--
IMPLEMENTATION [ARDUINO,SERVO MOTOR,ULTRASONIC SENSOR]--

WORKING MODEL –

4

5

6

Salient Features of SMART DUSTBIN

4

5

6

~~Automatic sensor based operation with zero manual intervention
~~Hygienic disposal with automatic and touch-less waste disposal
~~Smart indicators on the front display panel
~~Low power consumption
~~Designed to fit in small spaces and add to the aesthetics of your premises
~~Paper waste, plastic waste, food waste, and other commonly generated waste
~~ Used at Restaurants, food courts, hotels, offices, ships, trains, airports, adventure parks and other premium places.