GROUP 20

**BINNYBOT**

DETAILED REPORT

horizontal line

# 

# Working

When the button near a table is pressed, an mqtt message is sent by the table controller NodeMCU to the binnybot NodeMCU connected over a common wifi network. The binnybot NodeMCU forwards that message to Arduino Mega that is controlling all sensors and actuators. Arduino decodes the message, replies back with an acknowledgement and starts moving towards the respective table over a black line path. An array of 7 IR line sensors is used to detect the line and an arduino algorithm controls and decides the motion of DC motors to reach the correct destination.

When it reaches the table, a pushbutton on the bumper of the bot gets clicked and an interrupt is sent to arduino. Arduino then lowers its cleaning arm and sends an mqtt message to rotate the table for 15 seconds. After 15 seconds an acknowledgement is received to start checker if the table is cleaned. Bot raises its arm, makes a 120 degree sweep with an Ultrasonic sensor to detect any trash left on the table.

If the table is found clean, the bot sends another message and heads for its home position,

**Table NodeMCU:**

* Sends and receives mqtt messages
* Controls the movement of motors attached with tables

**Binnybot NodeMCU:**

* Sends mqtt messages to Table NodeMCU
* Receives mqtt messages, forwards them over hardware serial lines to Arduino

**Binnybot Arduino:**

* Sends and receives messages over Hardware serial line with NodeMCU
* Controls Line sensors, DC and servo motors, LEDs, Ultrasonic sensors.