

IOT DRIVEN SMART WASTE BIN

“Smarter Cities Begin with Smarter Bins.”

GARBAGE BIN ISSUES

- Overflowing Waste
- Inefficient Waste Collection
- Manual Operation
- Lack of Monitoring
- No Data Collection or Analysis



HARDWARE

- ESP32
- Ultrasonic Sensors
- Servo Motor
- LEDs (Red & Blue)
- Breadboard



SOFTWARE

- Arduino IDE (ESP32 code)
- Node-RED Dashboard
- HiveMQ Broker (MQTT)
- Wi-Fi network for real-time telemetry



KEY FUNCTIONALITIES

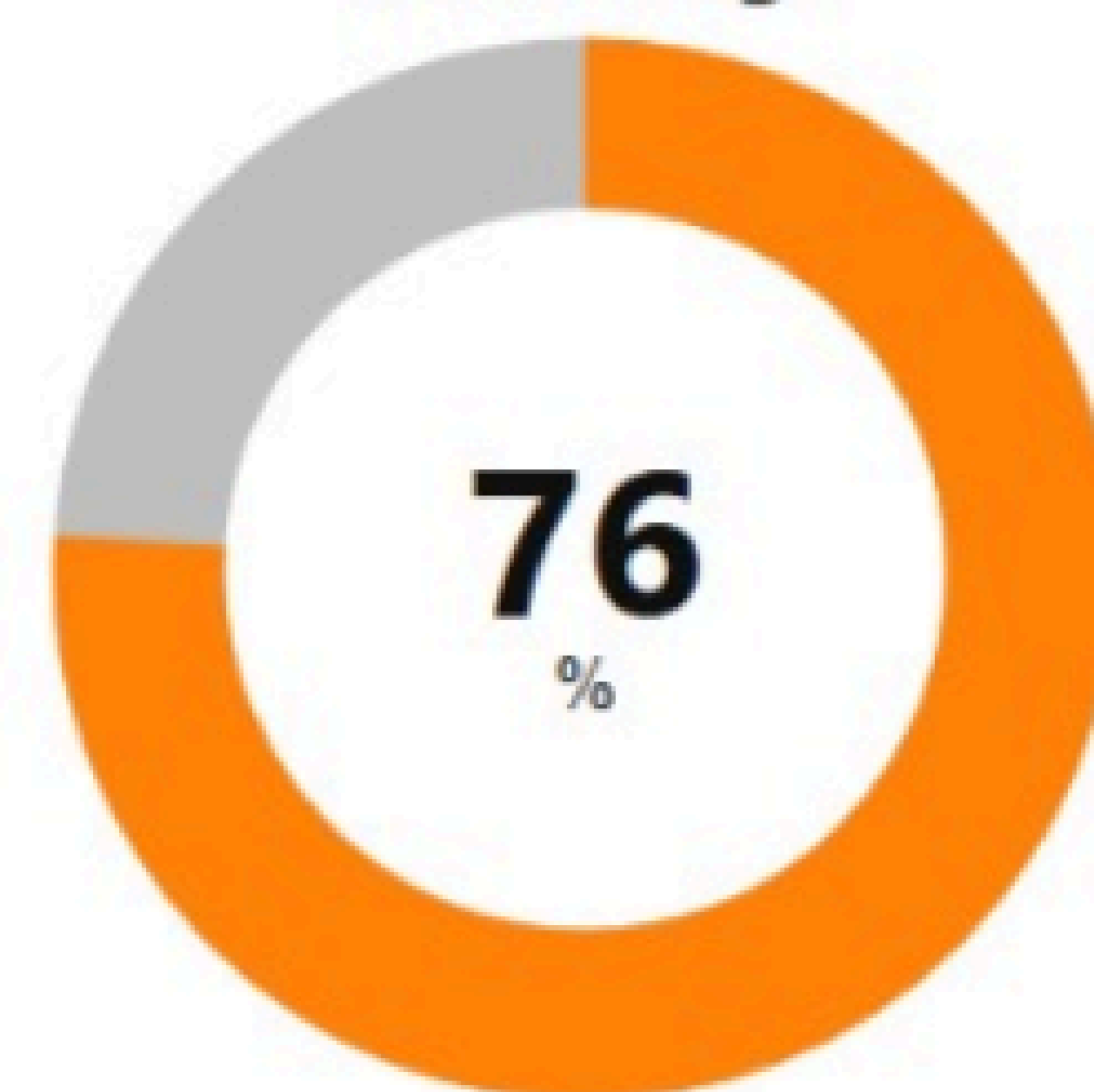
- Automatic Lid Control
- Smart Fill Detection
- Lock/Unlock Mechanism
- Data Logging

- Donut Display
- LED Status
- Control Panel
- Logs

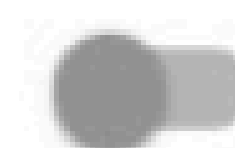
DASHBOARD

Admin View

Bin Storage



Admin Lock Bin



Locked

NO

Bin Code

Bin1

Location

Jaffna Town

LED:

BLUE

Last Trigger

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