Smart Bin

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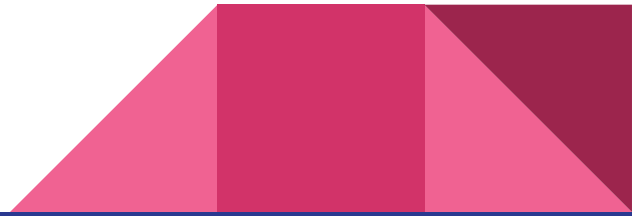

INTRODUCTION

The population of Academic City is gradually increasing .

Naturally, with an increase in population, rubbish disposal will increase and thus we need a better way of managing the waste produced in the school.

This project would is to develop a smart dustbin that automatically alert the waste management operators on the waste level of the bin.

INTRODUCTION : PROJECT OVERVIEW

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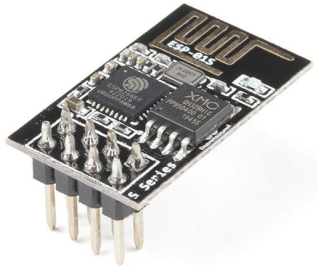

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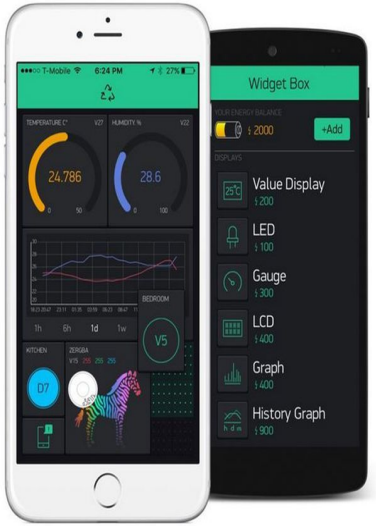
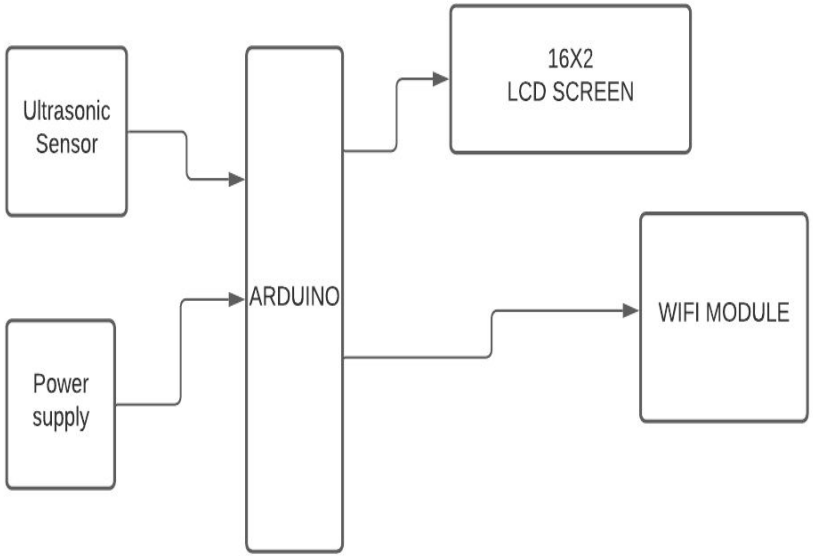
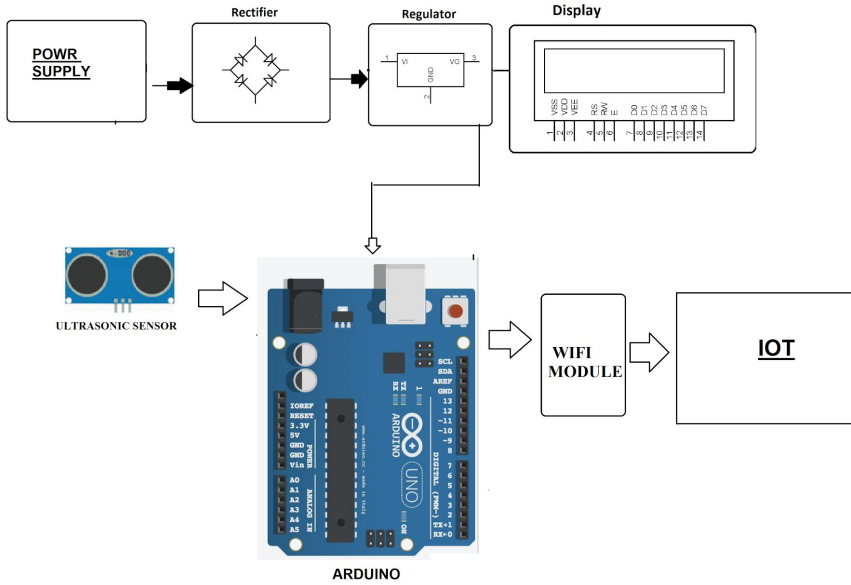


METHODOLOGY : FUNCTIONAL BLOCK DIAGRAM





METHODOLOGY : HOW THE SMART BIN WORKS

The main functionality of the smart dustbin is to send alerts when the dustbin is full so the waste management operators can swiftly dispose of the waste.

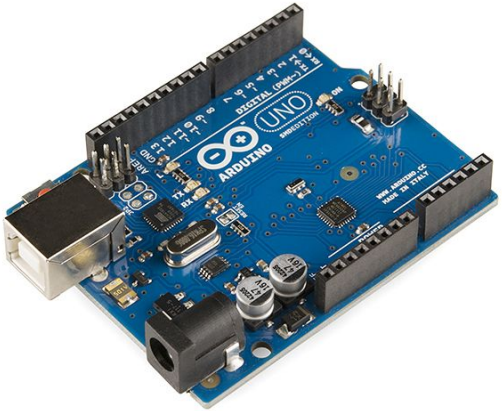
From the block diagrams , a simplified operation is given below:

1. The ultrasonic sensor measures the level at which the dustbin is full by through reflection of ultrasonic waves.
2. The arduino microcontroller processes the data and communicates with WiFi module through the serial communication ports
3. The Wifi module communicates with the waste operators through a mobile app to alert them the bin is full.

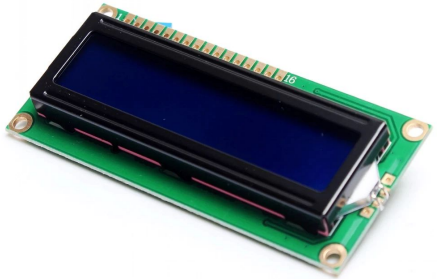
PROJECT COMPONENTS

Ultrasonic Sensor

Arduino Uno



LCD Screen



COMPONENTS AND PRICING

COMPONENT	UNIT PRICE
Ultrasonic Sensor	Ghc 10.00
Wifi Module	Ghc 30.00
Arduino Microcontroller	Ghc 60.00
Power supply	Ghc 10.00
Wires	Ghc 10.00
LCD Screen	Ghc 15.00
Total	**Ghc 135.00**

DECISION MATRIX

Project	Criteria	Importance Weight(A)	Weight (B)	Weighted Score (A x B)
Smart Dustbin				
	Features Functionality Cost Community Need	1 3 2 3	1 3 2 3	1 9 4 9
	Total Score			**23**
Mask and temperature detection				
	Features Functionality Cost Community Need	1 3 2 3	2 1 2 3	2 3 4 9
	Total score			**16**
Automatic Window Control				
	Features Functionality Cost Community Need	1 3 2 3	2 1 2 1	2 3 4 3
	Total Score			**12**

PROJECT TIMELINES

MILESTONE	TIMELINE	DURATION
Comprehensive literature review	3 days	17th May 2021 - 19th May 2021
Gathering Project requirements	1 week	17th May 2021 - 24th May 2021
3D Modelling and simulation of project	5 days	19th May 2021 - 23rd May 2021
Circuit Diagram modeling	3 days	21st May 2021 - 23rd May 2021
Building Prototype	5 days	25th May 2021 - 29th May 2021
Project deliverables presentation	1 day	TBD
Closure	1 day	TBD
Total		**3 weeks**

THANK YOU