THE SMART BIN

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Merivale
SERVICE IS OUR PASSION. PEOPLE OUR STRENGTH

INTRODUCTION

Merivale Software and Robotics Ltd., is focusing on finding technologically savvy solutions for the management of waste control and disposal.

OBJECTIVE

Team 12 is creating a mobile and web based, user-friendly application that would provide statistical analysis of user's waste.
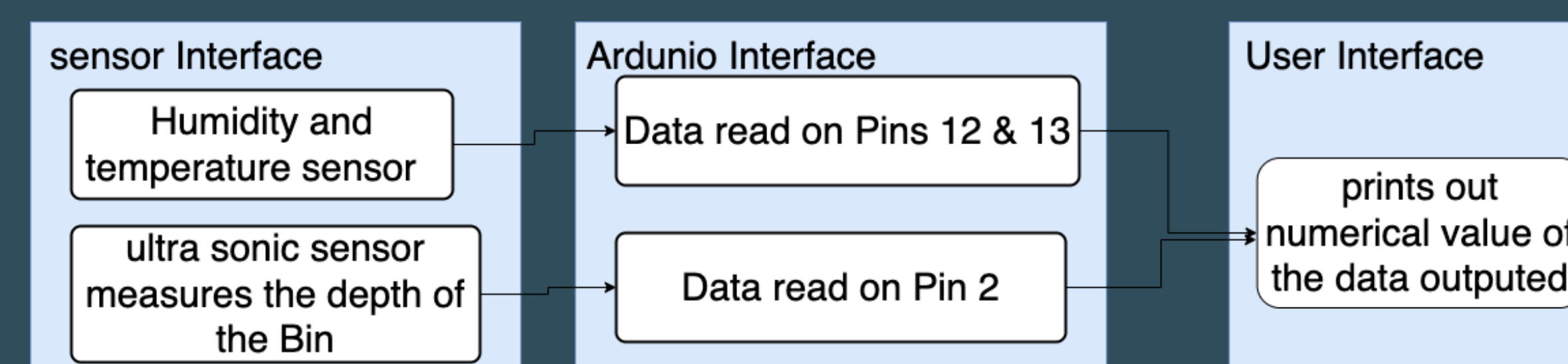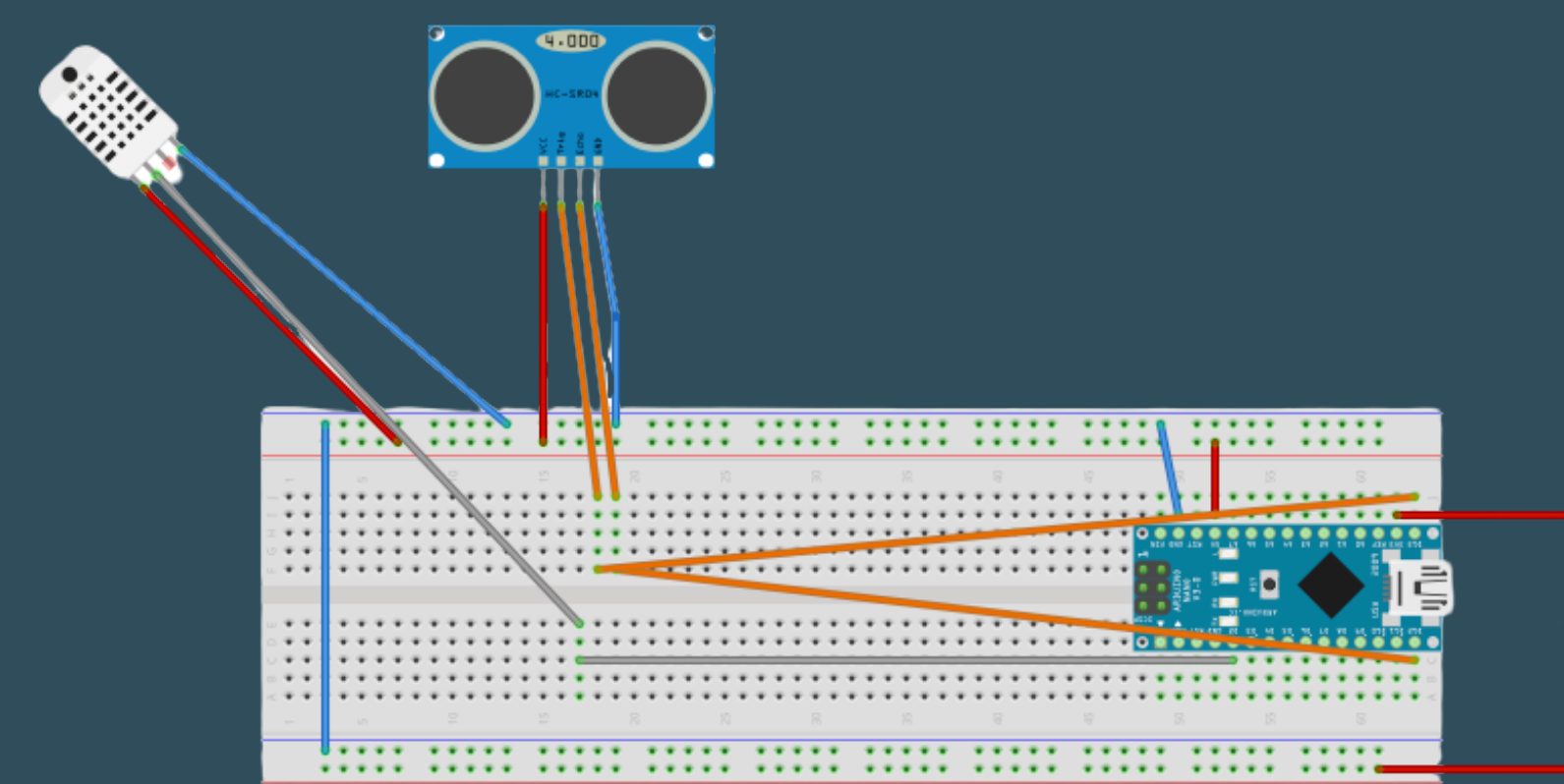
The Smart Bin App will work simultaneously with **The Smart Bin**, which will be loaded with data collecting sensors that will arm waste management companies with all the information they need to administer an efficient environmentally friendly waste removal process.

DATA COLLECTION

The Smart Bin will be loaded with data collecting sensors
Sensors to measure:
Bin Capacity Temperature Gasses Weight Humidity
Piezolelectric Buzzer (alarm)
Tracking Features (location)
Thermal Cameras to control pests
An odour control mechanism will also be implemented
WiFi internet connection
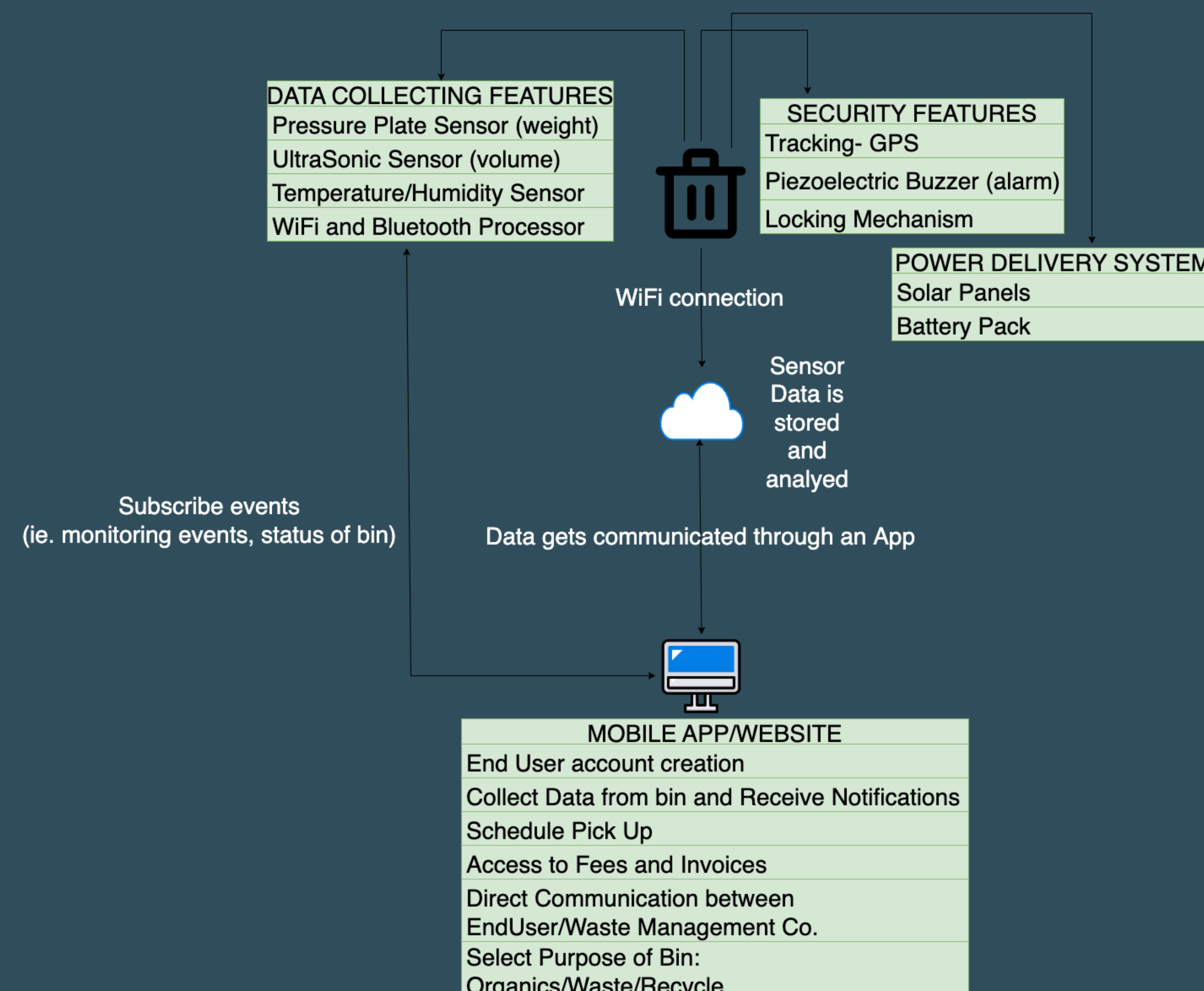Solar Panel / Battery pack as a power source

DETAILS OF DESIGN

sensor Interface	Ardunio Interface	User Interface
Humidity and temperature sensor	Data read on Pins 12 & 13	prints out numerical value of the data outputed
ultra sonic sensor measures the depth of the Bin	Data read on Pin 2	

Considering this concept is brand new, code will have to written for each sensor. We will be using the Ardunio application since it is what we are most familiar with.

We figure the most challenging aspect will be how to house the sensors and to protect the circuits in a bin that will be handled with force.

DATA COLLECTING FEATURES
Pressure Plate Sensor (weight)
UltraSonic Sensor (volume)
Temperature/Humidity Sensor
WiFi and Bluetooth Processor

SECURITY FEATURES
Tracking- GPS
Piezoelectric Buzzer (alarm)
Locking Mechanism

POWER DELIVERY SYSTEM
Solar Panels
Battery Pack

WiFi connection

Sensor Data is stored and analyed

Subscribe events
(ie. monitoring events, status of bin)

Data gets communicated through an App

MOBILE APP/WEBSITE
End User account creation
Collect Data from bin and Receive Notifications
Schedule Pick Up
Access to Fees and Invoices
Direct Communication between EndUser/Waste Management Co.
Select Purpose of Bin: Organics/Waste/Recycle

EASY MANAGEMENT with The Smart Bin APP

The App will allow the end user to select the bins purpose: Recycleables/Organics/Waste

End User and Waste Mngmnt can monitor the bin.
Pick Up schedules will be accessible

Waste Management company will also have the ability to set up billing through the app.
Drivers will have access to bin locations/routes

Interface will lead one through the process

FUTURE PLANS
obtain additional Hardware to continue programming and build off the current design.
work on additional elements for the smart bin app, For data collection.
Begin testing each feature.

CONCLUSION

How does THE SMART BIN better our community?

It allows the end user to have a better understanding of what waste their business is generating.

It helps waste management companies to be more efficient with their pick up schedules.

It collects information which can inspire changes for better environmental waste reduction practices.

Acknowledgements
Thank you to the Merivale team, Micheal Adeleye and Tosin Adewale for giving us this opportunity to be a part of this new venture.