Smart Luggage

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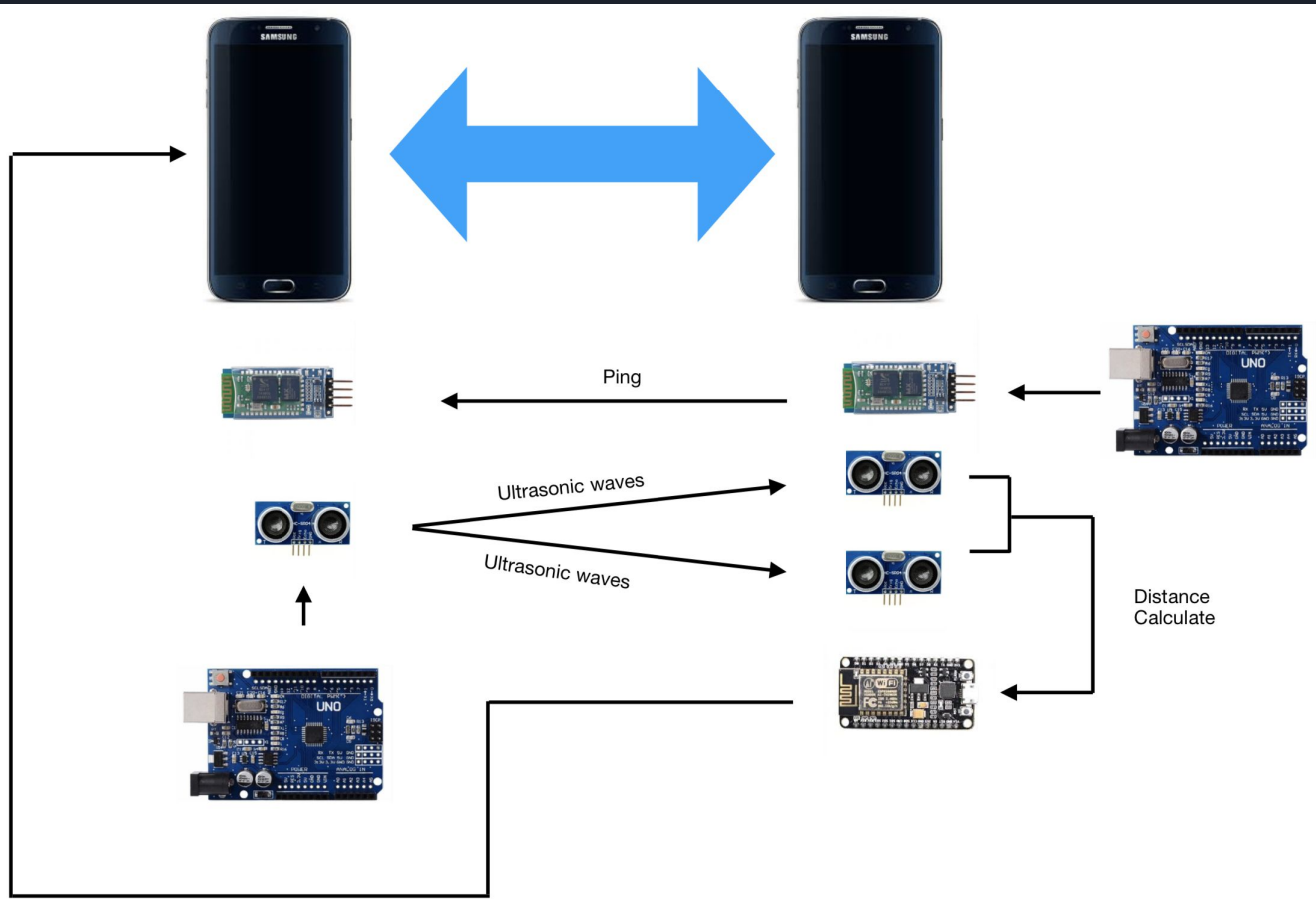
About the project

This project aims to make an Automatic Trolley Human Follower for a general or an industrial user that is affordable. The main objective is to reduce the cost yet increase the reliability, provide a viable solution for the old and the disabled. An automatic trolley human follower is developed to help a user to reduce the utilization of human energy in order to carry heavy things. This automatic trolley human follower is controlled by an Arduino, that can follow the user automatically using a combination of ultrasonic range sensors, accelerometer, gyroscope, fingerprint sensor, and camera. The trolley is motorised and can be used for personal as well as industrial purposes. In this project, a robotic vehicle is fabricated which runs like a regular trolley by carrying tools from place to another. This is done by using a set of receiver and transmitter ultrasonic sensor to detect a user in a specific meter range and it will follow the user.

Features

- Automatic Follower Bot
- Anti-theft using gyroscope and accelerometer(Uses Firebase, push notifications)
- No GPS, uses ultrasound for tracking
- Use side and luggage android application for control (Uses speech to text commands, Real Time Firebase DB)
- Dashboard for Real Time hardware analytics (Uses Chart.js, real time Firebase DB)
- Bluetooth for synchronisation between modules


Dashboard
DISTANCE
ACCELEROMETER X
0.83
ACCELEROMETER Y
3.05
ACCELEROMETER Z
10.34
WEBSITE FOR
ANALYTICS (DASHBOARD)


Ping
Ultrasonic waves
Ultrasonic waves
Distance
Calculate

Advantage of smart luggage

- Can be used by specially abled people
- Can be used for old people
- More accurate
- Cheap
- Hands free
- Easier to implement and manage

Future Prospectives

- Smart Shopping Cart Using RFID Sensors and RFID tags, an Automatic Shopping Cart that will follow a human. Whenever a product is put inside the cart, using the RFID tag on the product, the RFID sensors on the cart will automatically add the item on the bill that the cart will maintain.
- Smart GolfCart Have you ever wanted to play golf alone and not with any random person following you around? Well this is the solution to your problem.
- Cheap Indoor Navigation Few of the ultrasound emitters can be placed strategically to triangulate the position in indoor areas.

Thank you