SafeT

Travel safe while connected to your loved ones

Presented by: The Weirdoughs

- *“Slice slice baby”*

"A journey of a hundred miles begins with a single step"

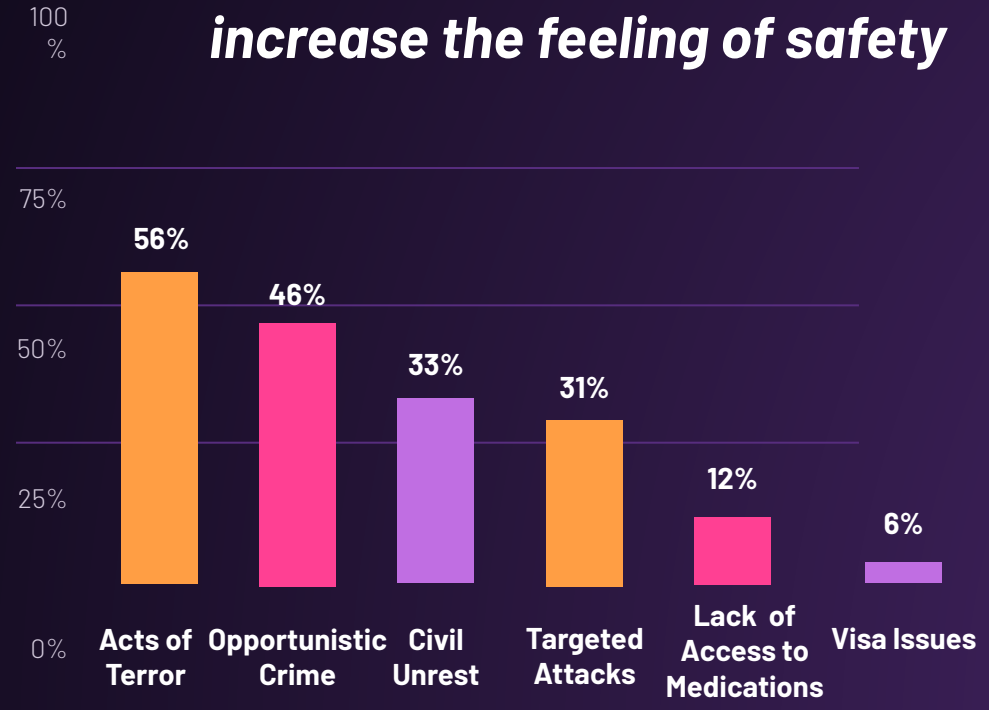
-Lao Tzu

However.....

What if this step leads to...

63% ***of women think about safety always or frequently while traveling.***

93% ***share an itinerary with a friend or family member to increase the feeling of safety***



What do you perceive are the most serious safety and security threats facing travelers in 2016? (NPR News)

Our Solution...

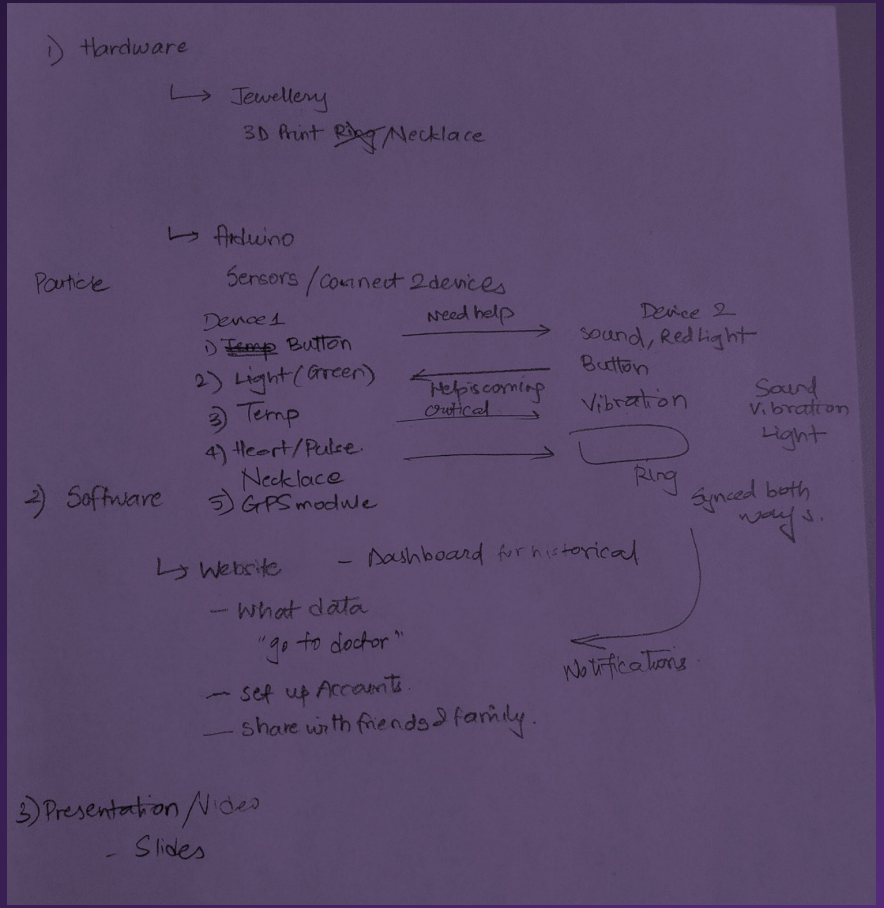
SafeT

Key Features

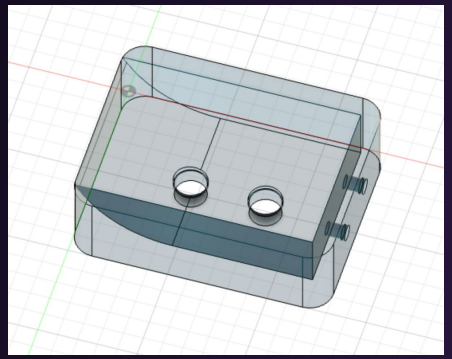
We built a set of **matching connected necklaces**

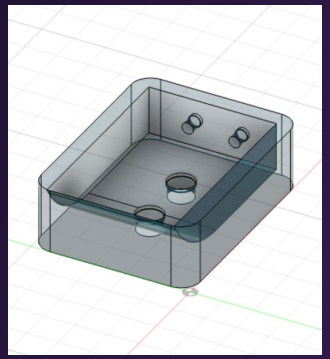
- **Buttons** to **signal the other necklace for help**
  - Turns on buzzer and red light
- **Anomaly detection**
  - If abnormal readings from **temperature + pulse sensors** are detected, the other user is automatically notified
- **Website** with a user profile to track biometrics and notifications

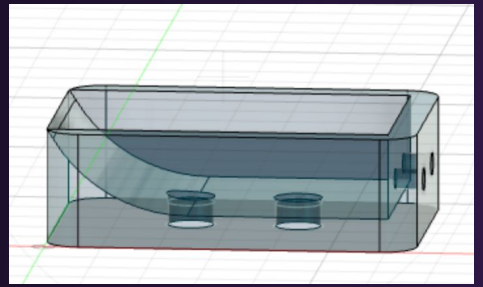
Our process


1) Hardware
↳ Jewellery
3D Print ~~Ring~~/Necklace
↳ Arduino
Particle
Sensors / connect 2 devices
Device 1
1) ~~Temp~~ Button
2) Light (Green)
3) Temp
4) Heart/Pulse
Necklace
5) GPS module
Need help
Help is coming
Critical
Device 2
sound, Red light
Button
Vibration
Ring
Sound
Vibration
Light
Synced both ways.
2) Software
↳ Website - Dashboard for historical
- What data
"go to doctor"
- set up Accounts
- share with friends & family.
Notifications
3) Presentation/Video
- Slides

Design & Modeling - Pendant



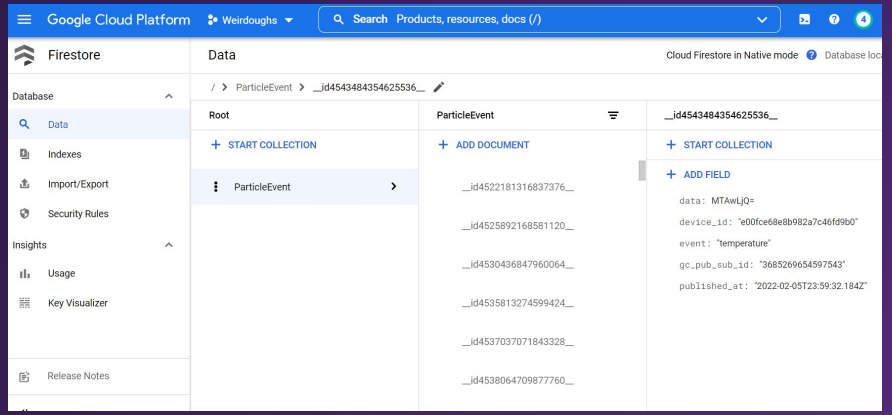




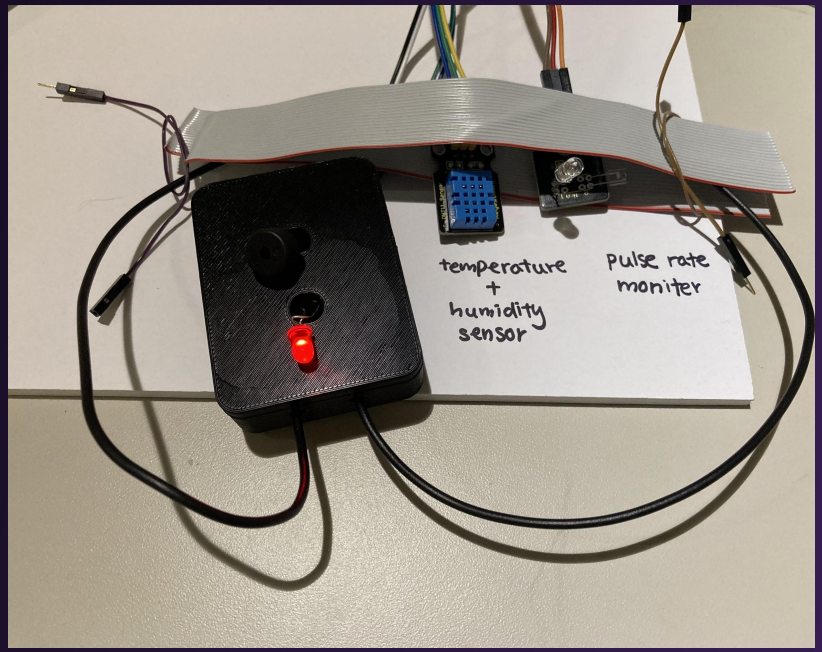
Electronics & Circuit Design

Components of necklaces:

- Used Particle: integrated IoT platform
- Lights & buzzer
- Temperature and pulse sensors
- Buttons
- Outer pendant case



Our necklace: The SafeT!



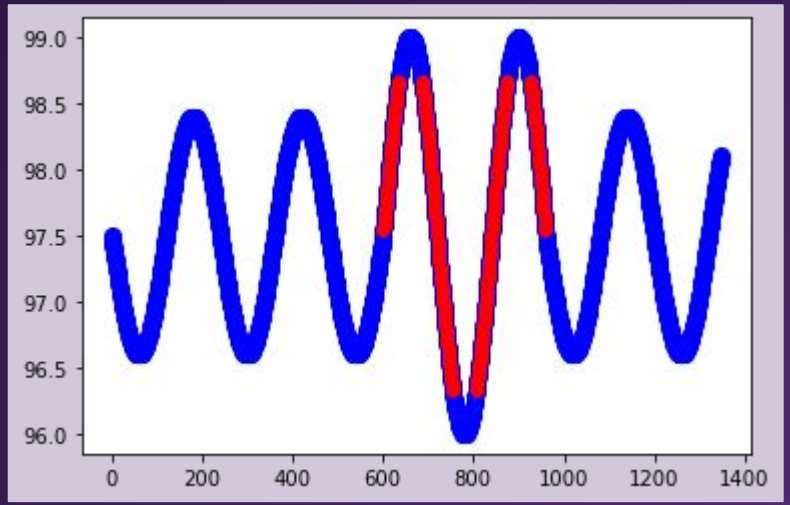
Website

Features:

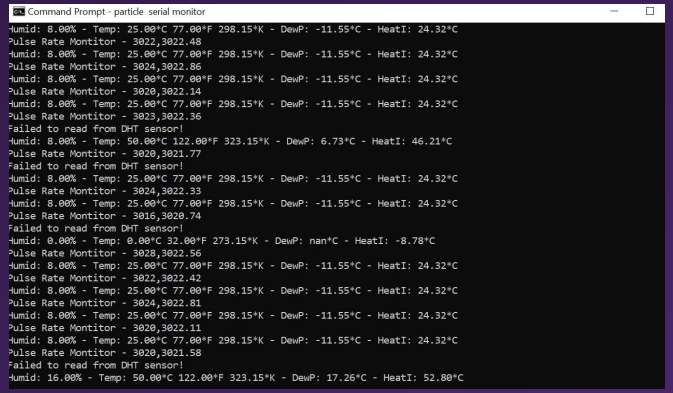
- Dashboard
  - View health history and notifications

Anomaly detection

- **K-nearest neighbors** to detect anomalies in user temperature
- Detects an abnormal increase/decrease in temperature before the peak



VIDEO DEMO - NECKLACE



Challenges We Ran Into

Developing a comprehensive approach to the challenge

We had an idea of what problem we wanted to address, but had to find a **comprehensive solution.**

Integrated different ideas into a cohesive platform to produce a multifaceted & holistic product

Hardware

Using both hardware and software lead to challenges figuring out which aspect of the device was causing bugs

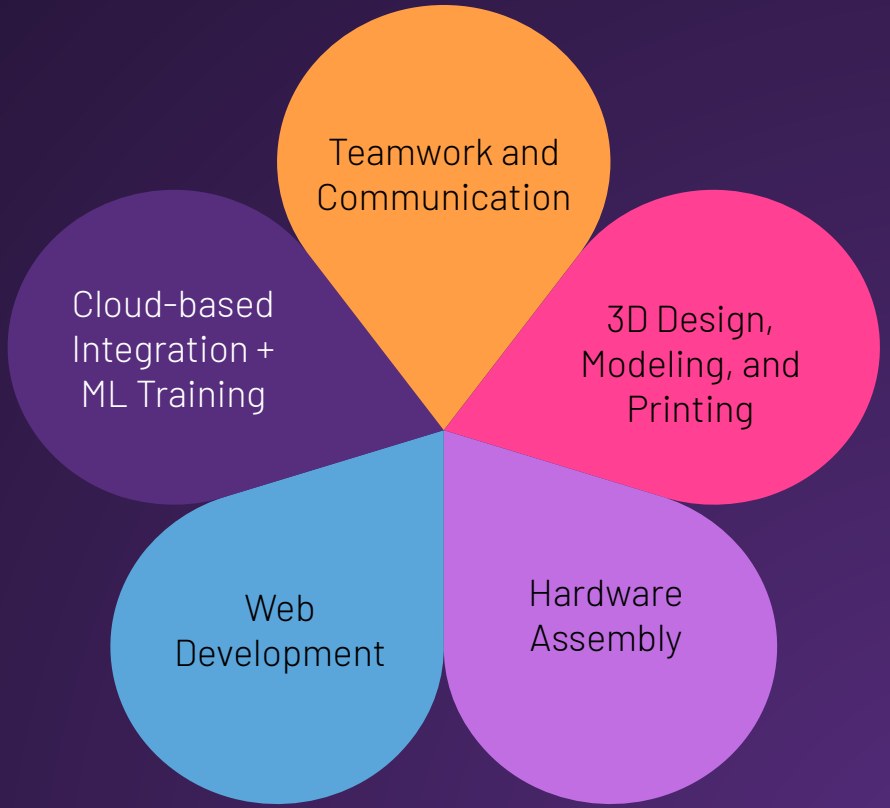
Green light not lighting up: Solution: toggled with the timer delay in our Arduino code

Hardware & software integration

We had to utilize **sensor data** for anomaly detection and the website dashboard

We transferred data to Google Cloud & integrated Particle with GCP and the data was received in FireStore for easy data access

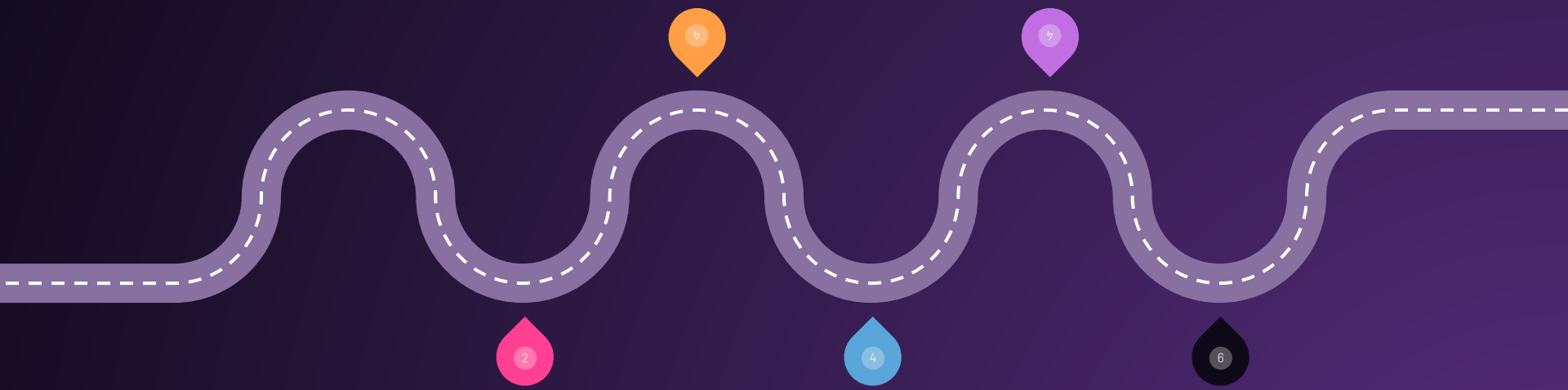
What we learned



Future Steps

GPS module embedded into the accessory for live location tracking

Alarm notification going to closest police authority nearby for help



Full AI & cloud integration with the website - an all in one platform

Miniaturize electronics & scale down size of pendant

Build a suite of accessories with communication capabilities & integrated safety features

THANK YOU