

# Social Distance Watch

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## Problem Statement

Andrea got COVID in late August, during the time that she had COVID she developed a heart issue. Months after COVID, the heart issue still remains. She is afraid of getting COVID again because of her remaining heart issue.

## Objective

The objective of our social distance watch is to detect when someone is nearby, so high-risk individuals or individuals who want to be aware, can safely, socially distance themselves from others.

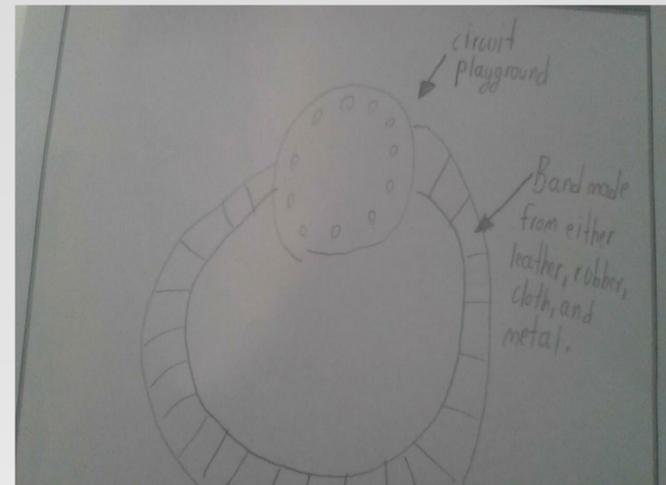
## User Requirements

User Needs	Prototype Needs
<ul style="list-style-type: none"> <li>It needs to be useful for them</li> </ul>	<ul style="list-style-type: none"> <li>The prototype is going to be really useful tracking people who isn't 3ft apart from you</li> </ul>
<ul style="list-style-type: none"> <li>The watch needs to be made out of leather and/or rubber</li> </ul>	<ul style="list-style-type: none"> <li>The prototype will be made out of the necessary material for a good experience</li> </ul>
<ul style="list-style-type: none"> <li>The watches beeps need to be quieter</li> </ul>	<ul style="list-style-type: none"> <li>The watch can be coded to where it could be quieter so it can startle you less.</li> </ul>

## Design Process

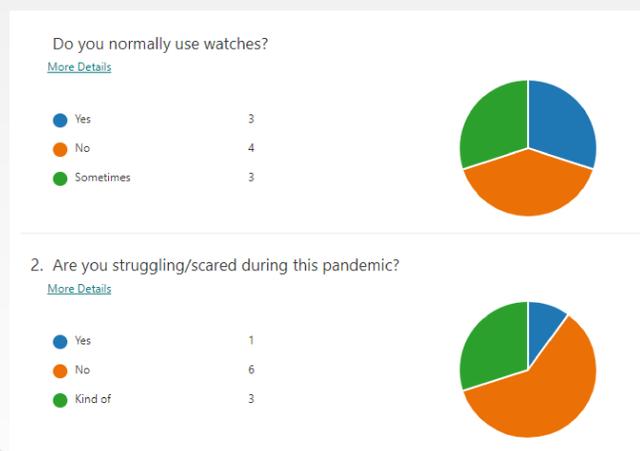


## Prototype

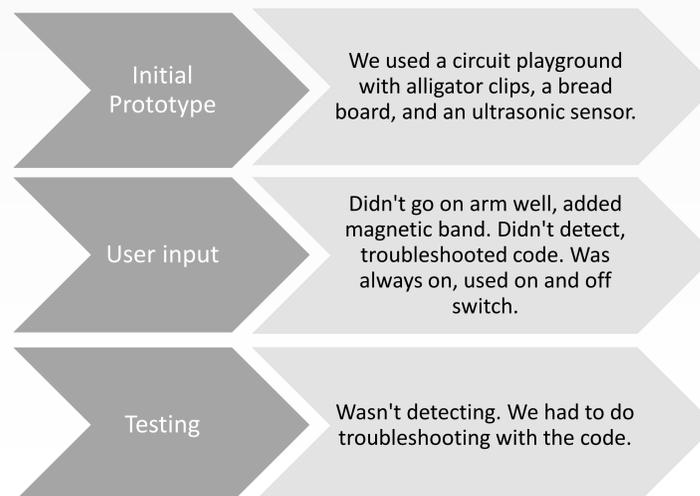


## Data

We have gathered user data through the form of a survey about the watch and here is some of the data we have gathered:



## Design Iterations



## Testing Process

We tried several versions of code and we tested whether it detected someone at 3 ft and would buzz or at 6 ft and it would light red.

## Prototype Details

Our prototype includes the ultra-sonic sensor, the circuit board, breadboard, alligator clips, battery block, electrical tape, and watch bands.

Main components of our prototype include:

- Ultrasonic Sensor - this detects if someone is close to you.
- Circuit Playground Express Buzzer - this makes a sound if someone gets close to you at 3 ft.
- Circuit Playground Express LEDS – this lights up red if someone gets close to you at 6 ft.
- Circuit Playground Express - this is the microcontroller used.

## Results

Our watch allows people to be able to detect when people are 3 and 6 feet away with different signals successfully.

## Conclusions

If we are given the opportunity to continue work on our project, we could add a timer and make the watch more lightweight, reduce the bulkiness, and make it more comfortable overall. We are relatively satisfied with the distance detection functionality.

