Breathe Well - 60

Karam Saleem | Albert Rafou | Peter Sadik |
Neever Kryakos | Rami Alsayeq | Alejandro Martinez

Our Goal

We plan to create a respiratory monitoring belt that will track breathing related health issues such as Asthma, Bronchitis, Sleep Apnea, and other similar diseases at an affordable price for the everyday consumer. Devices similar to this have a price tag so high, that most people shy away from making the purchase.

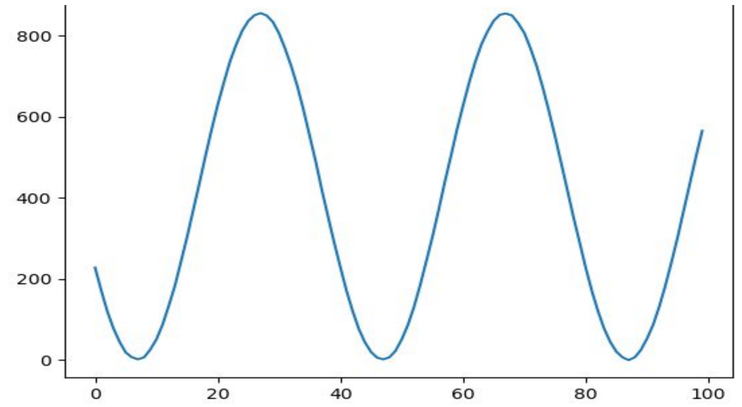
Our Plan

Our group plans to combine all of our skills in order to:
- Read variations of a magnet & sensor system across users' torso
- Filter out high frequencies and noise
- Amplify filter's output
- Convert analog signal to digital
- Send data to software interface, in order to graph our simulated result

Product Result

Above, you will see a theoretical prototype of our respiratory belt, incorporating the hardware on the left, as well as a magnet on the right.

Simulated Breath

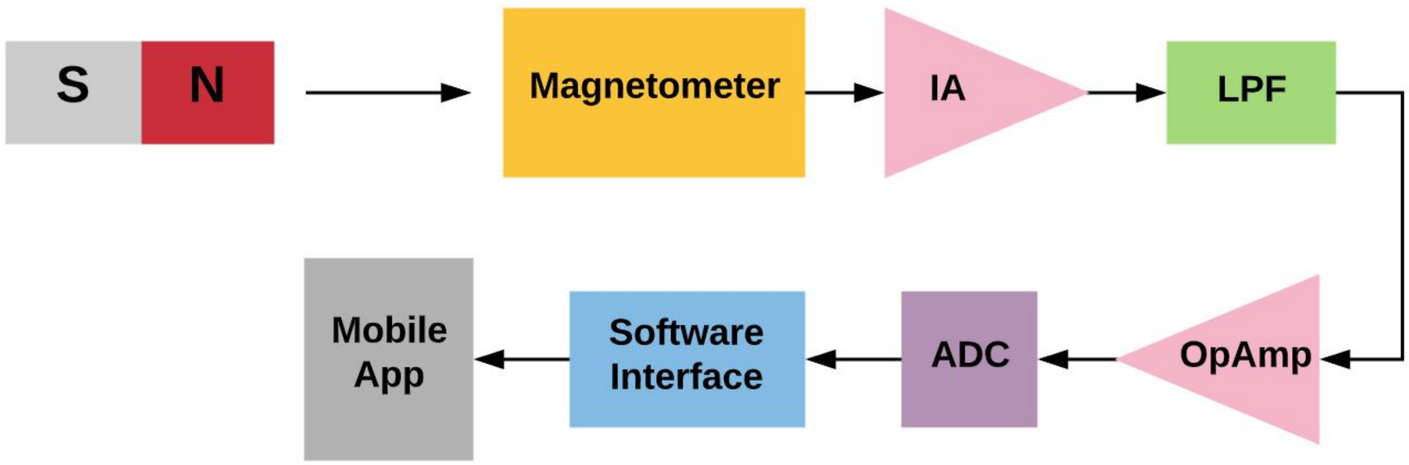


Once our connect button is pressed, our python mobile app will prompt the user to enter the amount of time the test will run for. Next, our results will be gathered from our board in order to generate the simulated output graph above.

PCB Layout

Shown is our prototype PCB design which was in the final test stage before we lost access to lab equipment due to the current COVID-19 situation.

Final Result Block Diagram



Acknowledgements:
We would like to thank Dr. Yusuf Ozturk for the continuous support as our advisor, as well as a mentor to us all.

SAN DIEGO STATE UNIVERSITY

496B
Spring 2020