



Watch The InFLUence

by Team Influence

Members: Avik Banerjee, Ivan Madrigal, Quyen To

Professor Rahim Esfandyarpour

Department of Electrical Engineering and Computer Science

Project Background:

The influenza virus is an infectious viral disease that impacts society as a consequence of:

- Multiple and changing strains
- Scale of infections
- Social, medical and monetary stress

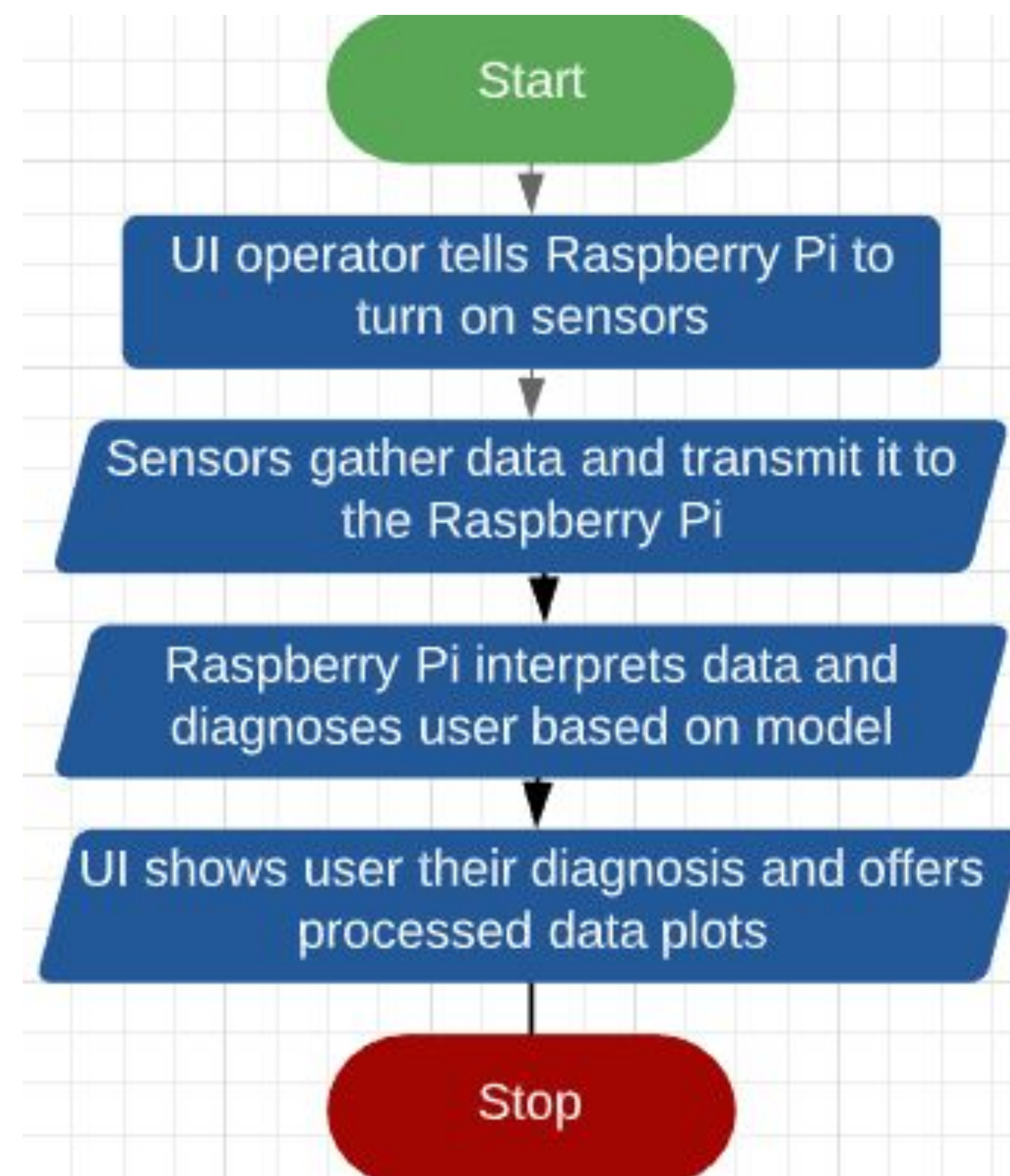
Project Purpose

- Early detection of influenza virus based on changes in user's body
- Containment of influenza
- Monitoring and tracking progress of illness on user

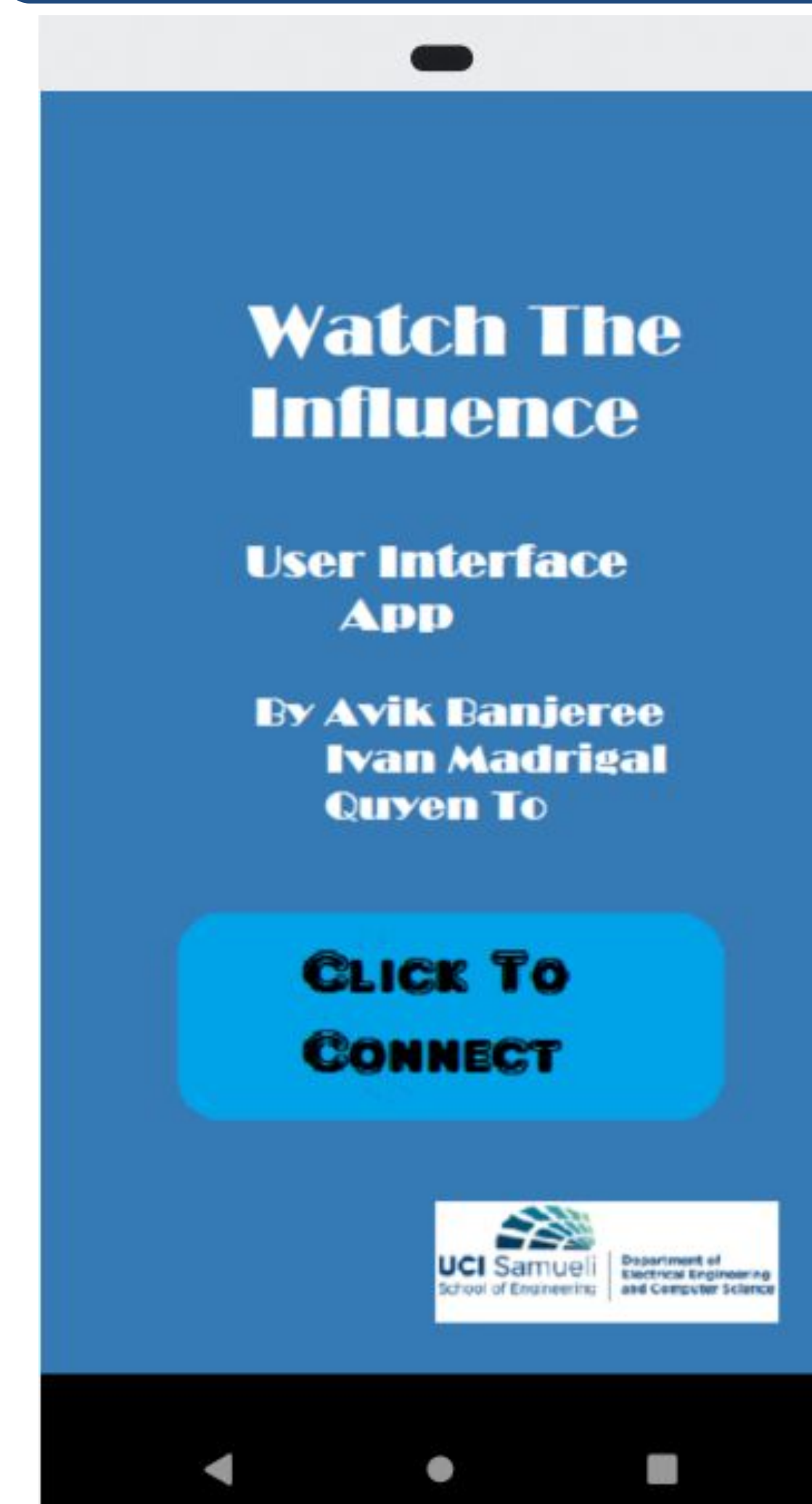
Project Progress

1. Communication between UI and Pi is possible.
2. Rudimentary Model Developed
3. All sensors arrived and can operate individually
 - Some issues with communication between sensors and Pi

General Design:



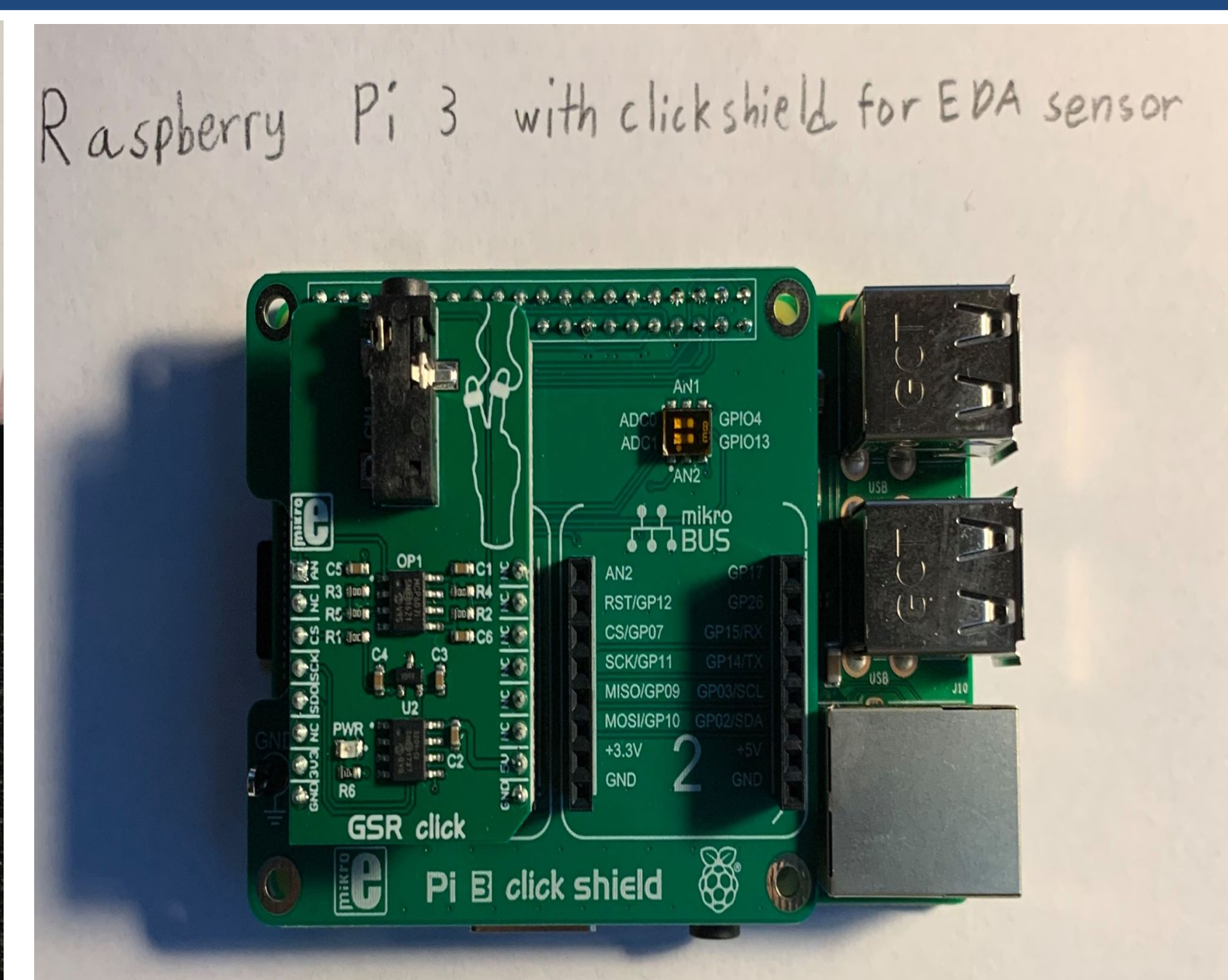
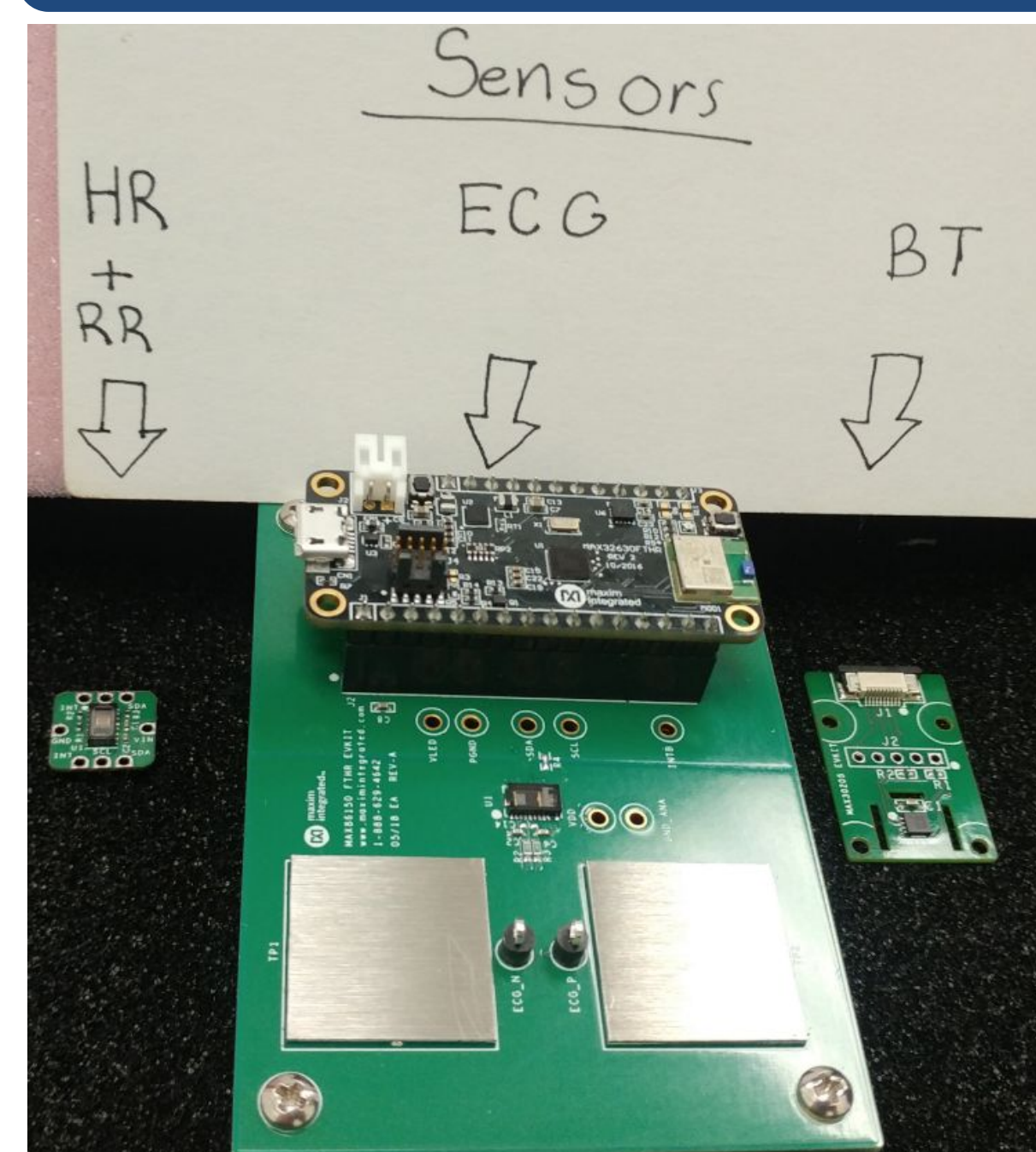
User Interface



Project Plan

QUARTER 1					
Research influenza	100%	Complete	Everyone	9/30/2019	10/4/2019
UROP Proposal	100%	Complete	Everyone	10/6/2019	10/25/2019
Research and approve sensors	100%	Complete	Ivan	10/6/2019	10/18/2019
Research necessary software	100%	Complete	Avik and Qu...	10/6/2019	10/11/2019
Design UI	85%	In progress	Quyen	10/12/2019	11/23/2019
Design Software and data sets	100%	Behind	Avik	10/12/2019	11/23/2019
Gathering Hardware	100%	Behind	Ivan	10/18/2019	11/1/2019
Process Hardware	50%	In progress	Ivan	11/11/2019	11/23/2019
Integrate Software and hard...		Waiting	Everyone	11/24/2019	12/1/2019
Single Subject Testing		Waiting	Everyone	12/1/2019	12/7/2019
QUARTER 2					
Develop model and algorithm			Avik and Qu...	1/6/2020	1/11/2020
Integrate onto wearable devi...			Ivan	1/6/2020	1/25/2020
Test and finalize design			Everyone	1/26/2020	2/8/2020
Large group data collection			Everyone	2/9/2020	2/15/2020
Model data			Everyone	2/16/2020	2/29/2020
Test model on small group			Everyone	3/1/2020	3/14/2020

Sensors and Other Hardware



References:

- [1] S. Ghebrehewet, P. MacPherson, and A. Ho, "Influenza," *BMJ*, vol. 2015, no. 355, Dec. 2016, doi: 10.1136/bmj.i6258.[Online]. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5141587/>. Accessed: Oct. 8, 2019.
- [2] G. C. Thomas, J. Arnold, E. Craig, E. C. Curnen, "Electrocardiographic studies in Asian influenza," *American Heart Journal*, vol. 57, no. 5, pp. 661-668, May 1959. doi: 10.1016/j.jneumeth.2010.04.028 [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S002870359901759>. Accessed: Oct. 10, 2019.
- [3] M. G. Ison, V. Campbell, C. Rembold, J. Dent, F. G. Hayden, "Cardiac Findings during Uncomplicated Acute Influenza in Ambulatory Adults," *Clinical Infectious Diseases*, vol. 40, no. 3, pp. 415-422, Feb. 2005, doi: 10.1086/427282. [Online]. Available: <https://academic.oup.com/cid/article/40/3/415/303135>. Accessed: Oct. 10, 2019.
- [4] S. Heinonen, H. Silvennoinen, P. Lehtinen, R. Vainionpää, T. Heikkiken, "Feasibility of diagnosing influenza within 24 hours of symptom onset in children 1-3 years of age," *European Journal of Clinical Microbiology & Infectious Diseases*, vol. 30, no. 3, pp. 387-392, March 2011, doi: 10.1007/s10096-010-1098-5. [Online]. Available: <https://link.springer.com/article/10.1007/s10096-010-1098-5#citeas>. Accessed: Oct. 8, 2019.