Day 1 Project Definition and Customer Needs

Sunday, July 9, 2023   6:31 PM

Goals

By the end of this lab, you should have accomplished or have a plan to accomplish the following:

- Define a problem, your customers, and your device. There are two assignments (due at the beginning of lab week 3) for your group to help guide this process.
    - Market Research
    - Customer Needs
- Project plan – your project plan is due at the beginning of your lab week 4. Get started now because there will be a bit of a learning curve for Microsoft Project.
- Team roles / responsibilities
- Action items for the next couple of week

Constraints

While working on your project this semester, you will have to operate within the following constraints:

- The device must be portable.
- A prototype of your device should cost less than $100.
- Because your device is still a prototype (whether your build a physical prototype or not), it is not expected to be the "final" device with optimized hardware, so some over- and under-engineering is expected.
- If you make a smartphone-compatible device, you can design the device to interface with your own personal smartphone, rather than have to worry about both Android and iOS and compatibility with all possible devices.
- Your device should be a complete solution. You will need to have some sort of way to display and evaluate the data you collect.

Possible Idea:

- Light dimming/optimal alarms times based on personal Circadian Rhythms (EEG? + Blood pressure + Temperature + Pulse + Light Sensor)
    - https://datadryad.org/stash/dataset/doi:10.5061/dryad.73f69
    - https://osf.io/j5cfs/
    - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6520649/#:~:text=A%20circadian%20rhythm%20is%20an,demonstrate%20a%20robust%20circadian%20rhythm.
    - https://www.ahajournals.org/doi/full/10.1161/HYPERTENSIONAHA.121.14519
    - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7065627/#:~:text=Blue%20light%20is%20currently%20considered,with%20severe%20general%20health%20implications.