EE/CprE/SE 491 WEEKLY REPORT 2

Start Date – End Date

Group number: 22

Project title: CY-Vital

Client &/Advisor:

Professor Meng Lu

Team Members/Role:

Daniel Karpov: Data Processing

Jay Patel : Data Processing

Sajan Patel: Full Stack Software

Ty Beresford: Full Stack Software

Chuck Mallek: Physical / Electrical Design

(All the above information should be there in each weekly report. The format/color scheme etc need not be the same. However, please remove everything that is in a bracket from your final submission. These are just part of the template and need not be a part of the report.)

- **Weekly Summary** *(Short summary about what the group did for the week. This should be about a paragraph in length. These are just a few questions to help you get started. What was the overall objective for the week? In general, what tasks were completed? Were there any changes made to the project?)*

- **Past week accomplishments** *(Please describe/summarize as to what was done, by whom, when and, collectively as a group. This should be about a paragraph or two in length. Bulleted points are acceptable as well. Please keep only your technical details related to your project. Figures, schematics, flow diagrams, pseudocode, and project related results are acceptable, but please ensure that they are legible (clear enough to read) and to provide an explanation. If researching a topic, please add a few details about what was learned and how it is relevant to the project. If two or more people worked on a single task, be sure to distinguish how each member contributed*

to the task. Specific details relating to the assistance provided to other members may be included here. ***Do not include classwork, such as individual reflection assignments, and group meetings as part of your duties.)***

• Daniel Karpov: I did research on how data processing works and how signals are able to convert from analog to digital. I also looked into some libraries that might help us do that. One library that I found was called Pandas. Pandas can help us with data manipulation and analysis.

• Jay Patel: Performed additional research on data acquisition devices for collecting and sampling data from sensors. Also found additional details on python libraries and apis to program hardware to correctly sample and process data dependant on sensors. Our team was supplied with a simple data acquisition device from our advisor. Using this device, was able to get a successful connection from DAQ to our tested computer•

·Sajan Patel: Did research on how our kit communicates with the computer. Looked into possible APIs/Libraries that we could use when it comes to data analysis. Tested sensors from kit given to us to see possible ways to implement in our own kit.

• Ty Beresford: I worked on finding available libraries for GUI development in Python; this is limited to strictly Python, as our project will be predominantly Python-based. By building off the data processing and analyzing library we intend on using, I am focusing on finding a more acceptable GUI platform to build upon. As well, with the help of Sajan, we tested the Stethoscope and Heart Rate monitor to ensure they function as intended.

- Chuck Mallek: Working on sourcing parts for the project, including the Arduino esp and electrode sensors. Working on sourcing parts for the DAQ device to get it hooked up to the computer for trial on the software side of things. Did more research on electrical components to include in our project.

- **<u>Pending issues</u>** *(If applicable: Were there any unexpected complications? Please elaborate.)*
  • Sajan - No issue
  • Ty Beresford: No current issues.
  • Chuck Mallek: no issues
  • Jay Patel: No issues.

- **<u>Individual contributions</u>** *(Creating this section is optional, but it is* ***Required to include the "Hours Worked for the Week" and their "Total Cumulative Hours" for the project for each member somewhere relevant in your report. Your individual weekly hours should be at a minimum of 6-8 hours for this course. So please manage your time well. Also, ensure that individual contributions support your claim to the weekly hours. Be honest with the reports.)***

<u>NAME</u>	**<u>Individual Contributions</u>** *(Quick list of contributions. This should*	**<u>Hours this week</u>**	**<u>HOURS cumulative</u>**

	be short.)		
Daniel Karpov	Researched libraries and played around with them. Studied data processing in order to get a better understanding	5	7
Chuck Mallek	Working on sourcing parts from spark fun and connecting the DAQ to a computer for software development.	5	7
Jay Patel	Researched data acquisition methods and different libraries available to interface with the DAQ	5	7
Sajan Patel	Tested the kit given to see possible solutions that we can implement into our project with Ty (Stethoscope & Heart Rate monitor).	5	7
Ty Beresford	Researched GUI libraries and pitched potential options for usage. Worked closely with Daniel and Jay to better ensure compatibility between backend and frontend. Tested kit with Sajan as well (Stethoscope & Heart Rate monitor)	5	7

- **Comments and extended discussion** *(Optional)*
  Feel free to discuss non-technical issues related to your project.

- **Plans for the upcoming week** *(Please describe duties for the upcoming week for each member. What is(are) the task(s)?, Who will contribute to it? Be as concise as possible.)*

- Daniel Karpov: Going to attempt to get a null signal from the DAQ into our computer to make sure we are able to get data from sensors into our program. I will also start playing around with some library data processing code that we will be using. Going to find some useful functions that we will need to use as well within the libraries.

- Jay Patel: Will work on acquiring and processing simple sensor data from the provided DAQ, such as a temperature sensor. Will test different sampling rates for sensors and form strategies on best possible methods of data collection.

• Sajan Patel: Get more data from kit given to see how we can implement in our own system. Look into using system with simple sensor such as push button. Look into possibly using usb-c cable for our project

• Ty Beresford: Associate return values from backend library, and begin investigating issues with existing commercial grade software. Due to the mess of windows in the commercial software, I will study proper techniques to allow users to use our software without cluttering issues. Due to minor embedded system work previously, I may assist Chuck if he runs into issues with the DAQ connector.

- Chuck Mallek: This week I will be trying my hardest to get the DAQ hooked up to the computer so that the software team can start on the development of their code. I will also start sourcing components for the next iteration of our product.

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- **Summary of weekly advisor meeting** (*If applicable/optional)*
  (Provide a concise summary on the contents and progress made during the advisor meeting.)

During our meeting with professor Lu, we discussed a number of topics related to the technicalities of our project. We discussed how our sampling rates will change depending on the type of sensor being used. We also discussed how our hardware will interface with our device, potentially using usb c connectors for our sensors. We as well were provided a room in the Student Innovation Center, which will now become the primary location to discuss and evaluate problems and solutions each member may come across.

Grading criteria

Each weekly report is worth 10 points. Scores will be awarded as follows:

- **8 – 10**: Progress for your project seems to be suitable. Documentation and hours reported by team members are adequate.
- **6 – 8**: There is scope of improvement both in your report and your project progress. Can consult with instructor/TA after class for further inputs.
- **< 6**: Please talk to instructors/TA after class hours about any difficulties that you/your team is facing.

Each weekly report should be unique in that they have a unique set of supporting details for your contributions. So please do not just copy your reports from the previous week. In addition, please avoid any personal pronouns (he, she, I, you). Try to keep your reports as neat as possible.