Weekly Journal Progress

# November 10th – 17th :

## Monday, November 11th :

Learned more about Git. Mainly how to use Git Bash and how console commands work with Git.  
  
Website used: <https://www.geeksforgeeks.org/working-on-git-bash/>   
[**https://www.datacamp.com/tutorial/git-push-pull**](https://www.datacamp.com/tutorial/git-push-pull)

## Wednesday, November 13th :

Watched a video on Python, how to use python scripts:

<https://www.youtube.com/watch?v=dQlw1Cdd3pw&pp=ygUYaG93IHRvIGRvIHB5dGhvbiBzY3JpcHRz>

Asked ChatGPT to give me some examples of scripts that can be run using python and what would we use for a humidity sensor project.

## Saturday, November 16th :

Looking at Nginx and how we will use it to visualize our presentation. Mainly analyzing how we can mix it with HTML.  
  
Links used: <https://nginx.org/en/>

<https://www.youtube.com/watch?v=q0tSIv22rgA>

# November 18th – 24th :

## Monday, November 18th :

I used ChatGPT to give me some more insight on our sensors and what model would be perfect for our constrained budgets and lack of expertise in finding material for Tuesday.

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A screenshot of a black screen

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## Tuesday, November 19th:

After the morning class, my partners and I went to search for the parts required to build our project. We found the sensor we wanted to purchase as well as a few other equipments like a board and wires to make sure we can have our project work.

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This is the sensor we bought: The SENS-SCD41 Gas Sensor. As for why I did not go with the options that ChatGPT brought forward is because after discussing it with my teammates, we realized that either the options were too expensive or too niche for the project we wanted to build.

Link to the ABRA website where we purchased it: <https://abra-electronics.com/sensors/sensors-gas/scd40-scd41-gas-sensor-module.html>

## Wednesday, November 20th :

After purchasing the pieces with my teammates, I decided to go ask ChatGPT, if there were any constraints or eventual problems that could arise with a python scripts and the sensor chosen.

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A screenshot of a computer program

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I also asked it to see with these probable errors if it can make us a basic python script and it came up with this.  
A screenshot of a computer program

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## Thursday, November 21st :

I went online to search for videos on how to install sensors and how to link it with a raspberry pi. Although I did not find what I was looking for exactly, here is what I watched:  
  
<https://www.youtube.com/watch?v=6UOiGkbp6w8>   
<https://www.youtube.com/watch?v=BpJCAafw2qE>   
<https://www.youtube.com/watch?v=ELznPFK1JJE>

<https://www.youtube.com/watch?v=Gl9HS7-H0mI&t=2s>

I find these videos pertinent to our project because they make me understand what I am dealing with, how I would start using the raspberry pi and how said raspberry pi can run scripts.

## Friday, November 22nd :

On Friday I decided to look up some more details about our sensor. (Where it should be placed in a room for the best and most accurate readings) I found that placing it on the higher part of a wall or the ceiling would make the readings more accurate. Next to a window is not preferred due to us wanting the reading in a room with as little outside influence as possible.

<https://learn.pimoroni.com/article/co2-detection-with-scd41#:~:text=You%20should%20position%20detectors%20away,can%20cause%20disproportionately%20high%20readings>.

<https://download.mikroe.com/documents/datasheets/SCD41%20Datasheet.pdf>

<https://sensirion.com/media/documents/0D0C9129/623B1183/Sensirion_CO2_Sensors_SCD4x_design-in_guide.pdf>

# November 25th – December 2nd :

Sorry, I’m so late. I was waiting for a group up with my teammates today to discuss this sensor project.

## Monday, November 25th :

Monday, I went and did some more research on the types of scripts the AI did for me. I saw that all if not most of them came from something called sensirion. I went to check if they had anything on their page but to no avail. However, when I went on the page of the sensor we bought (SCD41), I found some interesting data about said device. Among the data that caught my attention were some downloadable files called “Python Package SCD4x” and Raspberry Pi Driver SCD4x. They linked to a git repo and that’s where I found the right things we needed.

   
  
Link: <https://sensirion.com/products/catalog/SCD41>

<https://github.com/Sensirion/raspberry-pi-i2c-scd4x>

<https://github.com/Sensirion/python-i2c-scd>

## Wednesday, November 27th :

After I found out about the git repositories, I went to tell my teammates. Turns out, they found them much earlier than I did. I then waited for Tarek, Rafea who had the components to assemble the project and run the scripts we found. This turned out to be very long as we had to wait until we were all together to talk face to face. This is why I waited so long to send this journal. I thought to myself this is too short for a third journal entry.

## Monday, December 2nd:

We scheduled a meeting for this Monday, we gathered around together to discuss the sensor. Tarek brought the sensor connected to the raspberry pi and we saw that it worked. It sent the output to a .log file after running a .py script and a .service script. We then wanted to visualize the data to a Nginx file using Flask. That turned out to be very difficult. We spent almost 4 hours on trying to make a webpage work. We still are not able to make it work as of today. Me and Tarek, Abou Chahin are going to try to make a working webpage with data.

## Outcome and expectations:

I went into this project with a solid plan, week 1 get the information and resources then, week 2 assemble the project and have some tools and a basic script working and week 3 being the week where we finish the project by adding a webpage and cleaning up the data. This, however, proved to be not what we had imagined at all. First, our basic idea was to have oxygen sensor. We went to buy a CO2 sensor, similar but very different. Second, the data visualization, while sounds simple on paper, was a bigger challenge than we anticipated. Third, the tentative week plans went to the dump, since we realized that only one person can work on the actual thing at one time, I had to mostly do research. This put our progress at a halt. All in all, the project presented major hurdles as a team. A hard thing this was and I hope that our presentation can show this hard and rough work we put in.