Participation Portfolio Submission 1

## Example 1 (Sender for the first SRE)

* **What?**

I was a sender for the first SRE on Counting Sort and worked with James. Instead of going straight into algoirthm specifics and implementation details, I started by explaining the underlying logic behind counting sort: the existence of a countable universe guaranteed to contain all keys. After we were both at the same level of understanding, we continued on to writing the full algorithm that worked with key-value pair and the correctness and runtime proofs.

* **So what?**

Making sure that we both had reached similar levels of understanding of the hardest core parts of the algorithm made the construction of the algorithms and the proofs fully collaborative instead of there just being a one-way flow of information from me to him.

I would just give nudges to improve implementation or suggest he consider certain cases, but didn’t have tell him what the algorithm was on my sheet.

* **Now what?**

This meant he was actively thinking about how the core concepts he already understood could be applied to creating an algorithm that fit the prompt. When you create an algorithm “by yourself”, you remember and understand it way better since you came up with it.

Now I know that the best way of explaining a new topic to someone is to give them the knowledge building blocks so that they can come up with the solutions and conclusions by themselves. This is especially important when the goal is to reach deep understanding and not memorization.

## Example 2 (Got help student in House DHall and learnt a valuable lesson)

* **What?**

The day of the PSet 1, a group of students got together in the Adams dining hall at night to work on the PSet. I initially went there to ask about potential performance bugs in Radix Sort because my implementation was running slower than expected. I had been trying to resolve the issue for the past couple of hours hours, but five minutes after getting there someone gave an idea that let me solve it. I then stayed there for the next 2 hours helping the other people that were stuck at different stages of the PSet.

* **So what?**

I had never got help on coding problems before. Growing up I self taught coding, which meant that I only had myself and the internet to solve any solutions I had. Many simple issues took hours to solve because I had to think about it by myself and there usually wasn’t anyone available to help.

When I came to college, I got used to doing CS PSets by myself. This was the first time I had gone to someone else for help. Out of the hundred lines of sorting and graphing code, there was a mistake in just one line that was ruining everything. After explaining that the RadixSort worked fine, just slow, someone suggested I check if I was running CountingSort with the base **b** instead of **U**, and that fixed it.

(Went a bit over the world limit to explain background. Wrote less on the next question to compensate :) )

* **Now what?**

I learned the valuable lesson that collaboration always yields better work. I’ve become friends outside of class with some of the people I met that day. I started joining groups for every single PSet, and now try to find people around campus (office hours, latino club, dining hall, etc.) that need help with CS PSets.

## Example 3 (Helped student during after Office Hours had ended)

* **What?**

I went to Zach’s office hours to understand how I could improve my proofreading skills and while there, heard that someone was struggling with understanding the concepts for a late PSet. When the office hours where about to end he seemed quite stressed that he would not be able to understand everything until the next OHs, and he would have to take more late days.

* **So what?**

I stayed with him after office hours ended for another hour explaining the core concepts of BSTs and the rotate algorithm. I had made notes and figures for the concepts that I found hard, and it turned out that he found it super useful since he was struggling with similar topics. With the notes I gave him a mini lecture on BSTs in the SEC.

* **Now what?**

Learned something new about how to better explain new topics. I realized that it is often the case that learners struggle with the similar topics when trying to learn a subject, so sharing any insight that one figured out while trying to understand a topic can be very useful for the other person. At the end I gave him my phone number and then we continued the conversation over text.