# Individual Teaching Assistant Report for CSCI S-109A Introduction to Data Science (34716) Rylan Schaeffer

Project Title: **2020 Harvard Summer School Course Evaluation**

Courses Audience: **92**
Responses Received: **35**
Response Ratio: **38%**

**Report Comments**

Questions about 7-week and 3-week course reports can be addressed to:

Karen Flood
Associate Dean for Academic Affairs
evals@summer.harvard.edu

Questions about Pre-College Program course reports can be addressed to:

Jacqueline Newcomb
Director of Pre-College Program
precollegestaff@fas.harvard.edu

Creation Date: **Friday, August 21, 2020**

# Teaching Assistant Question

## TA Overall

| Question | TA Average | School (Summer) |
|---|---|---|
| | Mean | Mean |
| How would you rate your overall experience with Rylan Schaeffer? | 4.00 | 4.58 |

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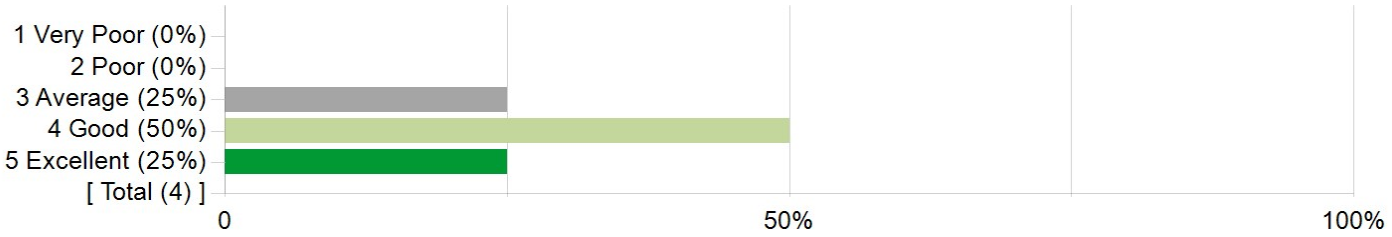
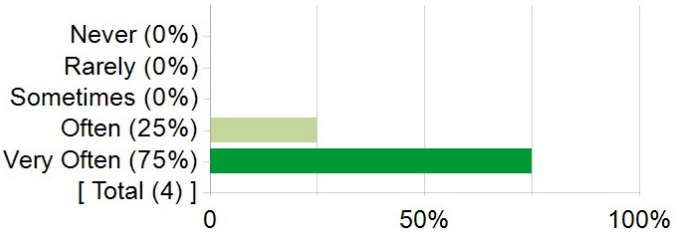



| Statistics | Value |
|---|---|
| Mean | 4.00 |
| Median | 4.00 |
| Standard Deviation | 0.82 |

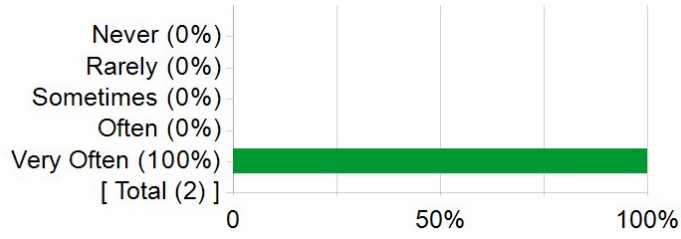
## What was your experience with the following aspects of instruction?

1. TA reinforced course concepts effectively




| Options | Score | Count | Percentage |
|---|---|---|---|
| Never | 1 | 0 | 0% |
| Rarely | 2 | 0 | 0% |
| Sometimes | 3 | 0 | 0% |
| Often | 4 | 1 | 25% |
| Very Often | 5 | 3 | 75% |
| **Statistics** | | | **Value** |
| Mean | | | 4.75 |
| Median | | | 5.00 |
| Standard Deviation | | | 0.50 |

2. TA was responsive to inquiries




| Options | Score | Count | Percentage |
|---|---|---|---|
| Never | 1 | 0 | 0% |
| Rarely | 2 | 0 | 0% |
| Sometimes | 3 | 0 | 0% |
| Often | 4 | 0 | 0% |
| Very Often | 5 | 2 | 100% |
| **Statistics** | | | **Value** |
| Mean | | | 5.00 |
| Median | | | 5.00 |
| Standard Deviation | | | 0.00 |

## Comments about the Teaching Assistant

### What did Rylan Schaeffer do that was most helpful for your learning?

| Comments |
| --- |
| Rylan is very knowledgeable of the topics and he is well suited for a position beyond a TF. He is very effective at explaining Python codes. |
| Please see my earlier comments. |

### What might Rylan Schaeffer have done differently to help you learn more?

| Comments |
| --- |
| Honestly, I cannot think of anything. Rylan was categorically outstanding. If I think of any constructive feedback, I will reach out to him via e–mail. |

# Spring 2020 Course Report COMPSCI 10 - STAT 10(FAS-COMPSCI 10-Elements of Data Science 001,FAS-STAT 10-Elements of Data Science 001) Rylan Schaeffer

Project Title: **2020 Spring Harvard FAS Course Evaluation**

Course Audience: **27**
Responses Received: **18**
Response Ratio: **67%**

**Report Comments**

Note:
The order that the questions appear on this report is not the same as the way the questions were displayed to students.
The order has been changed to make the report more readable.

Creation Date: **Thursday, June 4, 2020**

## Course Questions

### Considering only the first half of the course (on campus), what were the strengths of this course? Please be specific and use concrete examples where possible.

| Comments |
| --- |
| The course ensures that everyone is brought up to speed in terms of programming knowledge and abilities, no matter the level of background knowledge (none required). A lot of interesting topics relating to data science/statistics are discussed in class, such as how one can predict the outcome of elections or how taxi unions have used misleading statistics to make Uber look bad. |
| The lectures were extremely engaging. I had never taken a stat or CS course before and was completely enthralled. |
| Good TF:student ratio |
| I appreciated going through the case studies because they were super engaging to go through every week. I especially appreciated Liberty's lectures. |
| –number of TFs and their helpfulness. I thought the TFs were really great and I appreciated especially Salma AM and Rylan and Ben and Theo for their kind and helpful demeanors.<br>–Python/Tableau skills. This was perhaps the best part of the course in my opinion; it was really useful to learn how to make visualizations and to learn to code. It is a superpower.<br>–Having a guest lecture was really cool!<br>–Number of professors: it was cool to have a team effort! |
| I really enjoyed this course and think that it had many strengths. The number of TFs was super useful and they were always willing to help students understand the material. I also enjoyed the collaborative nature of the class and the way that the labs were set up to be a great introduction to Python that took into account the different coding abilities of students, especially as someone who had taken CS50 but hadn't gotten much out of the course. |
| I really enjoyed the structure of the class—partner coding labs, reading quizzes, assignments—each of these tasks made information manageable and interesting. |
| It was a great blend between data science and computer science. The amount of staff made me feel very supported. I felt there was of care put in the creation of the course. |
| Lectures were interesting and engaging, and the readings were for the most part useful. It was really valuable to integrate statistics, programming and data literacy and ethics all into one class. The teaching staff came from diverse backgrounds and the material was accordingly quite diverse. It was also great that the course truly assumed no background in coding, and as a result anyone could succeed in the course even if they'd never seen a line of code in their life. For me, this promise was the biggest draw of the class as I really wanted to get introduced to coding but for someone in my position, CS50 is pretty intimidating. I'm glad that this promise held out—I really feel like I got a solid introduction to Python. It took some work but it was not at all insurmountable and there was a lot of support available. |
| Good integration of practical examples into the actual data science, good in person class discussion. |
| I really liked how we analysed different data stories and learned how to evaluate the stories. The given examples were very good. Also I really liked the Colab notebooks and Tableau. I feel that these are really strong and valuable tools for data science. |
| Engaging discussion in class and lab on Friday. |
| Despite DS 10 being a new course, the class went really smoothly because the course was properly structured. |
| This class has a LOT of potential and I hope they make a lot of improvements (This is the first time it's being offering). Overall, I'd say the course covers a super broad range of intro data science material: python, writing a data story, tableau, intro statistics, and etc. |
| rather easy but very useful material great bang for buck |
| Good examples and case studies accompanying the class topics. Great use of getting student feedback. Clear strong effort by all faculty! |
| This was truly an introductory course that assumed no knowledge about data science (like an intro class should!!) Teaching staff were extremely engaging (especially Liberty). All TFs put a lot of time into helping students and were genuinely engaged in the class projects. Projects were set up well (weekly check points). Despite the fact that I will not be a data science this class actually made me look at the world and the news I am fed a different way (a real Harvard enlightenment). The weekly labs were the PERFECT way to teach coding to students with no background. I actually have tools to do basic stats and visualizations in python now!! |

**Considering only the first half of the course (on campus), how could this course be improved? Please use concrete examples where possible and provide constructive suggestions.**

| Comments |
| --- |
| In my opinion, the work relating to writing data stories was not the most exciting. It may be that I was somewhat mislead when I chose the course, but I anticipated more CS and stats than article writing. While I realize this is done in order to practise communicating findings in the data science process, perhaps one could consider exchanging one of the data story assignments with some sort of presentation (video or in person) to switch it up a bit? |
| There needed to be more accountability for learning the lecture/reading material. The quizzes were sort of a joke. And although the HWs touched on the material, they often seemed more just like separate coding exercises |
| Pace was a bit too slow |
| This course had too much busy work (arbitrarily long writing assignments, readings quizzes that only made people a little more nervous) that took time that could have been spent to learn more coding, to go into depth in our design sprint, etc. Additionally, there were too many emails being sent out all time that it was confusing trying to understand what to do for the week, how to prepare, etc. If there was one email going out every week, that would have been helpful. |
| –less busy work: yes, I hesitate to use that phrase, but it was present in this course. There was a lot that was trying to be fit into a semester survey course on Data Science, and the degree to which we did some of the article writing or reading and some of the book's chapters did not seem as helpful as merely absorbing the lectures and working with Python and Tableau to put into practice the skills we were learning. |
| I think it could have been improved in that the material taught was a bit scattered. Though I did appreciate the fact that the course was to be a cohesive introduction to Python, there were times when I didn't really understand why certain statistical concepts were being taught and was pretty confused for those. |
| I wish we had more freedom to try different projects for our design sprint and final. |
| There was too many breaks for discussions sometimes. Office hours times were not very balanced. |
| I thought the first half of the course generally went really smoothly. My main frustration was that I was forced to do all the labs in pairs. This wasn't bad in itself, but the procedure adopted shortly after we moved online seemed much more logical. Having a chance to work through the labs on our own was much more useful, as I could play around and test different functions without time constraints or pressure of a partner looking on. I wish that the whole class had worked like that: labs available all week for students to work on, and then on Friday, you could be paired with a student and TF if you hadn't already finished to work through the rest of the lab or troubleshoot any issues. |
| More practice at using Python skills, more chances and lessons to learn Tableau. During Homeworks, I often felt like I hadn't had enough practice before. |
| In my opinion, the essay homework was often very time consuming and did not have a great effect on my learning curve. Maybe we could do the Colab as homework instead. This would also make sense because the students have very different speed when going through the Colab notebooks. |
| It was more timeconsuming than expected. |
| So many improvements. The major issue that I disliked about this course was that there was too much busy work and there seemed to be a big disconnect between the TF and the professors. I'd say it felt almost like taking two classes at the same time: one python class and one data science class. And the two classes don't really connect together until the end of the semester. If you are looking for a coding–based data science class, I'd take gov 1005 instead. |
| logistically confusing and exhausting |
| Xiao–li Meng's lectures were often difficult to follow and did not manage time very well.<br><br>The final presentations were somewhat a waste of time. |
| The math heavy/ equation heavy lectures seemed less applicable to the actual course and what we were producing and instead just filled up lecture time. If the math was supposed to be an actual take away of the course than there needed to be some way of checking students knowledge of it (or it could have been left out all together and instead more coding could have been taught). |

## Overall, there was instructional continuity between the first and second half of the semester.

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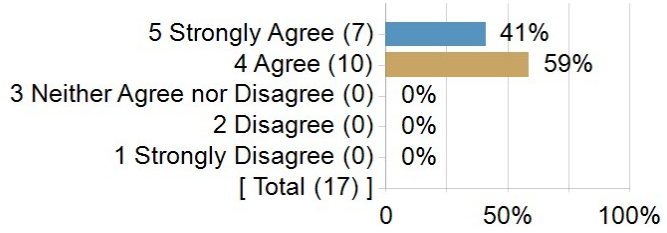


| Options | Score | Count | Percentage |
|---|---|---|---|
| Strongly Agree | 5 | 7 | 41% |
| Agree | 4 | 10 | 59% |
| Neither Agree nor Disagree | 3 | 0 | 0% |
| Disagree | 2 | 0 | 0% |
| Strongly Disagree | 1 | 0 | 0% |
| **Statistics** | | | **Value** |
| Response Ratio | | | 63% |
| Mean | | | 4.41 |
| Median | | | 4.00 |
| Standard Deviation | | | 0.51 |

## Although the second half of the course was delivered in an unanticipated format, I was able to meet key learning goals for this course.

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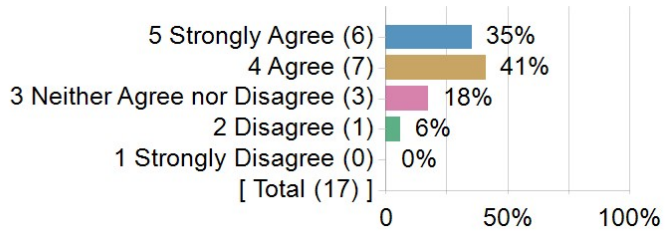


| Options | Score | Count | Percentage |
|---|---|---|---|
| Strongly Agree | 5 | 6 | 35% |
| Agree | 4 | 7 | 41% |
| Neither Agree nor Disagree | 3 | 3 | 18% |
| Disagree | 2 | 1 | 6% |
| Strongly Disagree | 1 | 0 | 0% |
| **Statistics** | | | **Value** |
| Response Ratio | | | 63% |
| Mean | | | 4.06 |
| Median | | | 4.00 |
| Standard Deviation | | | 0.90 |

### Were there any particularly creative solutions that the faculty or teaching staff used to facilitate remote learning?

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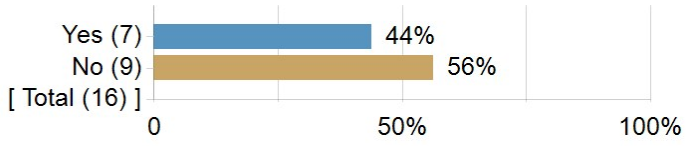


| Options | Count | Percentage |
|---|---|---|
| Yes | 7 | 44% |
| No | 9 | 56% |

### If so, please describe.

| Comments |
|---|
| Aside from moving over to zoom as all other classes, the fact that this class was not too large and encouraged interactivity, break–out rooms were used in class. This allowed for active participation in class, perhaps even more so than in person. Additionally, allowing the students to collaboratively take notes on the readings was a fairly neat and creative step taken by the staff. |
| Perusall for the readings |
| Because a lot of the course, thanks to the hard work of the course staff, transitioned well, there didn't seem to be a big transition required in how the course was taught. |
| I appreciated the tutorials Salma put togetber for lab times! |
| The adapted lab structure was great, in my opinion (I suggested this around the time we went online and was really happy to see it implemented—I felt like the course staff was actively listening to feedback and trying to improve). I enjoyed completing all my labs in advance. I took a lot more than an hour on all of them but I think I learned more as a result and gained a greater understanding of how all the functions work and how to implement them in my own coding. And I felt a lot less pressure because there was no time constraint and no partner who had to wait for me.<br>I also appreciated that reading quizzes were stopped after moving online. |
| Final Design Sprint session was interesting |
| break–out rooms were great for labs. |
| To keep students engaged with our text book DS10 staff introduced us to the Perusall tool which was at times helpful |

### What was/were your reason(s) for enrolling in this course? (Please check all that apply)

| Options | Count |
|---|---|
| Elective | 14 |
| Concentration or Department Requirement | 3 |
| Secondary Field or Language Citation Requirement | 0 |
| Undergraduate General Education Requirement | 0 |
| Expository Writing Requirement | 0 |
| Foreign Language Requirement | 1 |
| Pre-Med Requirement | 0 |
| Divisional Distribution Requirement | 1 |
| Quantitative Reasoning with Data Requirement | 0 |

## Transition to remote instruction

### In this course, what aspects of remote learning worked well?

| Comments |
| --- |
| The assignment work and classes worked very well in my opininon. Everything was more or less as it was in person. |
| Final projects |
| The labs worked pretty well on zoom, and I appreciated having a single TF assigned to me to help. |
| –PollEV, recorded lectures, and everything in general still worked great! There weren't really any hiccups that I could recall. |
| I think remote learning has worked okay in that classes have attempted to keep the consistency of meeting times and sections and so on. |
| I liked the tutorials of the labs! |
| The use of Poll everywhere was really helpful in gauging learning for me. I think it also works well in Zoom. The staff was really great about remaining connected to the students. |
| Lectures still worked pretty well, readings were obviously fine. The revised lab format worked better after classes went online than before. |
| The weekly lectures worked well and felt a lot like the real thing. |
| homework management and final project |
| Allowing students to watch videos. |
| N/A |
| labs and homeworks |
| Lectures were good. |
| Using perusall for textbook readings. Labs (peer coding through shared screens) also went surprisingly well. |

### In this course, what aspects of remote learning didn't work well?

| Comments |
| --- |
| Working together on the final project remotely was perhaps the most inconvenient part of the course, however I would say this was not that big of an inconvenience given the situation. Here I am thinking mainly of working together on code and visualizations, but screen sharing is a nice solution here. |
| Labs/office hours |
| The lectures were not as engaging and the readings did not complement the lectures well. |
| –Abrupt ends to helpful discussions in breakout rooms. I know there is really no way to prevent this sometimes, but there were a few times where I missed out on a key explanation by Rylan or Catharine or Ben because we ran out of time. |
| For me, remote learning has been a hindrance to my learning. In class, things were a lot more active and engaging, and it was a lot easier to ask questions, get help or explanations from TFs, and so on, all during the class period. I was both learning and understanding as the class went along. During remote learning, it was a lot easier to fall behind, especially since not all of the class time was necessarily devoted to explaining the material in the interest of fostering collaboration. |
| Lectures could be a bit dry |
| The final project showcase didn't feel very helpful. I was unprepared for the amount of feedback we would be receiving in what had been stated to be a low stress showcase of our projects. Some of the feedback during the showcase in general felt unfair in because the way in which the presentation was set up changed multiple times. |
| Lecture breakout rooms were a bit stressful, and I didn't really feel like cold–calling was fair in lectures. I also felt like lab meetings on Friday were somewhat pointless. It seemed a much better system to ask students to work on the labs on their own time, and instead to use Friday as an opportunity for us to ask questions of the TFs and troubleshoot issues we'd encountered in the labs. |
| The partner element of the lab meant I could still from them, but they didn't feel like the original labs and I didn't see the value of a partner. |
| time management in the lectures |
| The purpose/required level of the final projects was vague. |
| Remote learning did not transfer well for this course. There was a lack in engagement and motivation. |
| discussions |
| Office hours! Labs were okay, although it was unclear if it would be time well spent. |
| Was very hard to follow math heavy lectures through zoom. |

### I was able to participate fully in the course during remote learning.

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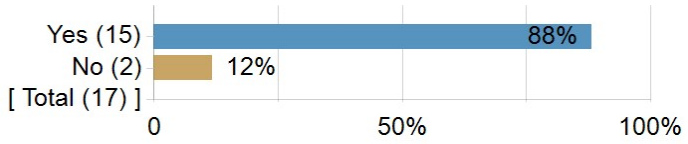


| Options | Count | Percentage |
| --- | --- | --- |
| Yes | 15 | 88% |
| No | 2 | 12% |

### Please Explain:

| Comments |
|---|
| I had no issues being able to participate in class. |
| The teaching team was accommodating. |
| I was able to, but it was extremely difficult trying to balance this course, which requires long, frequent zoom calls both for class and outside of class with project partners, with home. |
| I felt like the course transitioned well and I was still able to have helpful resources and able to complete work efficiently with few issues. |
| The problem sets were reduced: which was sad but made it accessible. |
| This course depended to a large extent on in–person interactions, so I understand that it was a challenging transition to remote learning. Generally, I still think that I learned a lot and appreciate all the ways in which the course staff tried to accommodate the change. |
| I did all the homework and always attended the live lectures |
| As explained before, the projects were vague. |
| due to time difference I felt very isolated |
| I attended everything. |

### I was able to interact and collaborate effectively with my classmates during remote learning.

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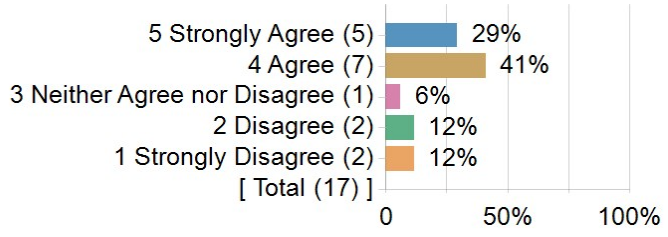
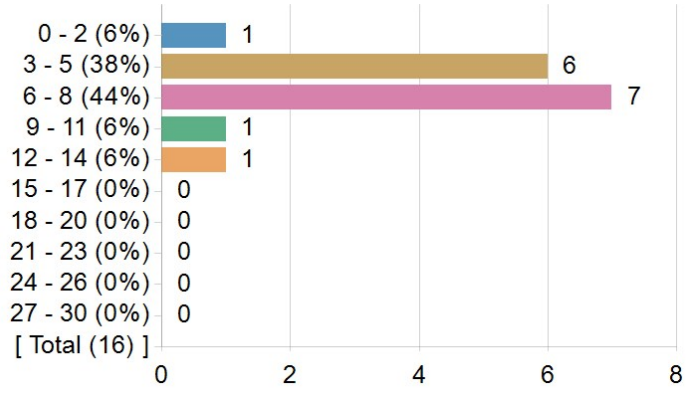



| Options | Score | Count | Percentage |
|---|---|---|---|
| Strongly Agree | 5 | 5 | 29% |
| Agree | 4 | 7 | 41% |
| Neither Agree nor Disagree | 3 | 1 | 6% |
| Disagree | 2 | 2 | 12% |
| Strongly Disagree | 1 | 2 | 12% |
| **Statistics** | | | **Value** |
| Response Count | | | 17 |
| Mean | | | 3.65 |
| Median | | | 4.00 |
| Standard Deviation | | | 1.37 |

## How many hours per week did you spend on this course during the second part of the semester (during the Harvard Closure)? Enter a whole number between 0 and 168.

Frequency chart and mean excludes students who answered 31 or more hours.

How many hours per week did you spend on this course during the second part of the semester (during the Harvard Closure)? Enter a whole number between 0 and 168.




| Statistics | Value |
|---|---|
| Response Count | 16 |
| Response Ratio | 59% |
| Mean | 6.19 |
| Median | 6.00 |
| Mode | 4, 7 |
| Standard Deviation | 2.66 |

## What did you have to do differently as a learner to adapt to remote instruction?

| Comments |
|---|
| Get accustomed to participating in lectures on zoom, implement virtual collaboration through screen sharing, file sharing, google docs etc. |
| I had to stay up to work and force myself to be productive in the evening, when I usually am more productive just in the day. |
| Nothing much, other than learn how to use Zoom! :) |
| I think I had to get used to the concept of learning online and having that be my primary mode of instruction rather than viewing online materials as more supplementary ones. Furthermore, my home situation was not the most conducive for online learning, with several siblings who were also learning online at the same time in a relatively small space. On–campus, I would spend most my time studying at the library, but I didn't actually have that luxury here, making it harder for me to learn effectively. |
| Not much! |
| I had to pay attention more because Zoom learning is more fatiguing. |
| To keep learning remotely, I had to actively try to reduce the number of distractions in my house and room. I also had to spend a little more time figuring things out on my own since I couldn't ask my peers or TFs as easily. However, I really enjoyed working on labs on my own time without the time constraints of Friday's class period. The required lectures were a bit frustrating, as they were often at inconvenient times since moving back home. I wish I could've watched them on my own time without pressure to attend live. |
| Take time to learn more materiel on my own, as well as planning out my day better. |
| I had to ensure I was always on time (different time zone). I had to ensure I stay motivated even if I do not see my fellow students in class. |
| I had to accept the impossibility of joining the live classes. |
| Trying to stay motivated. |
| No great impact on the group project for the final. |
| Hard to put in more effort into working with others for group project (there are many more moving parts when teams are physically separated). |