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## Reflection Essay

As a first-year learning analytics student, I was excited to take this course at the beginning of the semester. From the first class, I learned that we will learn some data mining techniques to extract useful knowledge from educational raw data. I had my undergraduate degree in information systems. Honestly, I am always passionate about coding and data analytics. It would be quite interesting for me to step into data mining in the education field. Throughout the semester, I have completed assignments that have increased my skills and broadened my sense as a researcher. I would like to address my take-aways from this course:

My biggest takeaway from this course is to realize that big data could be utilized to help identify priority learning needs for different groups of students, increase graduation rates, assess institutional performance, maximize campus resources, etc. The lectures were engaging and kept me brainstorming. If more of the policies in the future will be data-driven, would that guarantee a higher level of equality? Would the teaching be more efficient? I started to think about all these complicated issues, and dream about what I could possibly do in the future.

Throughout the coding exercises, I become interested in machine learning. Even though what machine learning is currently feasible to obtain is limited, I was still amazed by the introduction of the technology. ACA 2 got me engaged in training the dataset and predicting the values. ACA 3 and 4 had me experienced clustering, PCA, and social network analysis. All these topics are new to me, I got a fulfilling feeling of accomplishment by the time I finished these projects. I like the ACAs, because they are open-ended and we could choose different approaches while practicing the same skillsets. I have never coded in Python prior to this course, nevertheless, I found it was easy to get started with and handle it.

Another great thing about this course is the flexibility in the working process, whether in a small group or individually, in Python or R. I greatly appreciate the opportunity for us to make some of the decisions on our own. I worked on two of the ACAs with my group members, and two of them by myself. I found that group work needs more concise and clear communication. It could be quite challenging to communicate in the coding process. When I work individually, I could direct my own approach easily, however, the workload is much heavier than group work. I enjoyed both ways. I should have also tried to work the ICes on both python and R to have different things tried out.

Overall, I was so glad that I took this course this semester. The final EDM project presentations were like academic pitches that get us super engaged. Many of the topics evoked my passion to dig deeper into. If possible, I would love to do some research in the lab in the near future. Anyways, I think it is the most interesting and engaging course I have taken at TC so far, and I could not wait for HUDM 4051 next semester.