Throughout this semester's BIG DATA course, I have gained extensive knowledge in various professional fields related to big data, including, Hadoop, MapReduce and Apache, as well as proficiency in utilizing diverse databases such as PostgreSQL, MongoDB, Neo4j, and MySQL. The course was incredibly enriching, through classroom teaching and every after-class exercise that enabled me to acquire a relatively high level of skill in database management, data processing, and visualization. However, the knowledge about big data is endless, and I still need to consolidate and expand new knowledge through follow-up efforts.

My work partner and I worked very well together, we actively discussed the knowledge in class and completed homework together after class. I was fascinated by this feeling of teamwork; it strengthened my interpersonal skills and made me appreciate the joy of solving problems with my peers. I'm thankful that I have a wonderful team that has allowed us to complete a slightly difficult challenge together this semester。

Week1

In the first week, we had a preliminary understanding of big data and solved the following problems

a) Explain the meaning of the term "big data" and give examples

b) How big data analytics can help increase business revenue

c) Describe the difference between structured and unstructured data

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I can appreciate the importance of big data in today's era. There are many kinds of big data, including: data-intensive technologies that can be used for data storage, data visualization and analysis, computation and distribution, and data warehousing

Week2

The second week was learned types of Databases, Data Analytics Real-world , Databased examples. I learned how to use Relational and NoSQL, and how to use various databases in the real world

Week3

Using campus security robots as an example, I learned more about the role of data and databases in solving real-world problems through specific situational problems. In particular, the database can give corresponding solutions to the problems of different

situations as soon as possible, especially the use of big data to solve unexpected events

Week4

I learned how to use the Apache HADOOP framework and HDFS MapReduce to solve scenario problems. Using these techniques, real-world problems can be transformed into matrices and tree models in mathematics. In particular, the Hadoop framework is very useful for counting multi-object and multi-node objects

Week5

I mainly learned MongoDB and comparison to relational SQL. MongoDB can easily process structured data, and compared with SQL, it is easier to operate, can manage databases with a level of pseudocode-like simplicity, and has a higher versatility in processing data.

Week6

I learned how to visualize data, and I used Spyder, which is based on Python, to summarize complex data into images that can be visually observed with the naked eye. Different data can be converted into bar charts, line charts, dot charts, pie charts, etc. By visualizing the data, it is easier to observe the data and reflect the value of the data

Week7

I learned about Neo4j, a graph database, which is not as easy to manage and store large-scale data as structured data, but it can visually represent the relationships between different data objects