Day 4

**Task 1: MySQL for Data Scientists**

**Background:** MySQL is an essential tool that students interning as data scientists should prioritise learning. Here's why:

1. Data Storage and Retrieval: As a data scientist, you'll frequently encounter structured data that needs to be stored and organised efficiently. MySQL is a widely used relational database management system (RDBMS) that offers robust data management capabilities. Learning MySQL enables you to effectively store, retrideve, and manage datasets, providing a solid foundation for your internship.
2. Data Cleaning and Preprocessing: A significant part of a data scientist's work involves cleaning and preprocessing data to ensure its quality and usability. MySQL's powerful SQL interface allows you to manipulate and transform data easily. You can use SQL queries to filter, aggregate, join, and clean data, which is crucial for preparing it for analysis.
3. Data Integration: Internships often involve working with data from diverse sources and systems. MySQL facilitates data integration by offering tools like MySQL Workbench and connectors to various data sources. Learning MySQL allows you to import data from different formats or connect to other databases, enabling you to merge and analyse multiple datasets effectively.
4. Data Exploration and Analysis: MySQL provides a rich set of SQL functions and operators that are invaluable for data exploration and analysis. By mastering MySQL, you can perform complex aggregations, calculate summary statistics, group data, and apply mathematical functions. SQL's capabilities, including subqueries and views, empower you to break down complex analysis tasks into manageable steps.
5. Performance and Scalability: MySQL is renowned for its performance and scalability, which are vital for handling large datasets and complex queries. During your internship, you may encounter extensive data or computationally intensive operations. By learning MySQL and implementing indexing and query optimization techniques, you can achieve fast response times even with substantial data volumes.
6. Collaboration and Integration with Data Tools: MySQL is widely supported by data analysis and visualization tools, making it highly compatible with popular data science frameworks and programming languages like Python, R, and Apache Spark. Integrating MySQL with these tools enables you to seamlessly work with databases and leverage the capabilities of your preferred data science ecosystem.
7. Data Security and Access Control: Data security is crucial when working with sensitive or confidential datasets. MySQL offers features such as user authentication, granular access controls, and data encryption. Gaining proficiency in MySQL ensures that you can handle data securely, an essential skill in any internship or professional data science role.

Learning MySQL is essential for students interning as data scientists. It equips you with the necessary skills to handle data storage, retrieval, cleaning, integration, analysis, performance optimisation, collaboration with data tools, and data security. Acquiring expertise in MySQL will significantly enhance your effectiveness as an intern and provide a strong foundation for your future career in data science.

**Task 1 Details:** You need to watch and practice complete Playlist from this [link](https://youtube.com/playlist?list=PLuqiuVSCTLiUNHNIf-X7O7FHNcGZpi57Y) and upload your final database (sql) with a pdf report of your learning outcomes.

**Task 2:**

Scratch All [Hadith](https://sunnah.com/) and  https://40hadithnawawi.com/

[40HadithNawawi.com - The Forty 40 Hadith of Imam al-Nawawi](https://40hadithnawawi.com/)

 data and save into a MySQL Database. Upload your database file on google drive and share public link, I ([Tausif](https://www.linkedin.com/in/cwtausif/" \o "‌" \t "_blank)) have already done this and used that data in Taibah Islamic App ([Android](https://play.google.com/store/apps/details?id=com.taibah), [iOS](https://apps.apple.com/us/app/taibah-islamic-prayer-times/id1506196597?ls=1" \o "‌" \t "_blank)). You need to install this app as well so you can see that how books, chapters and Hadith's are shown.

**If you done with these two tasks, I can guarantee you will feel proud of yourself as this surely a challenging task, Students always asks me how industry projects looks like and what kind of work we needs to do. So I have just shown you Taibah which is USA based Islamic app.**

Good Luck,  
Note\* Hadith should be around 33,750.

Prepare these interview questions which will be asked from you on the end of Week 1 (Date will be announced soon)