Unit 6: Database Design and Normalisation

Overview

This unit focused on how to structure databases, clean data for storage, and apply normalisation to keep systems reliable and efficient. I deepened my understanding of how relational databases work—especially the role of primary and foreign keys in linking tables and maintaining data integrity.

Key Takeaways

- **Data Cleaning & Storage:**
  We looked at how proper cleaning methods help create consistent, well-organised datasets that are easier to manage.
- **Relational Database Structure:**
  I got more confident with relational database structure, especially how key fields support linking and reduce errors.
- **Anomalies and Data Integrity:**
  We explored issues like duplication or deletion anomalies that can affect accuracy if a database isn't properly structured
- **Normalisation:**
  I learned how normal forms (1NF–3NF) help reduce redundancy and ensure efficient, scalable design.

Team Project: Database Design

In our group project, we acted as software consultants designing a logical database. My contributions included:

- Structuring entities and attributes
- Selecting tools like PostgreSQL based on storage and access needs
- Explaining our data cleaning and integration process in the final proposal

You can view our full project here:

Team Project.pdf

Personal Reflection

This was a hands-on unit that tied everything together—data quality, design, and team collaboration. Working with peers came with some friction; not all contributions met expectations, which reminded me that group work often involves balancing different skill levels and approaches.

As someone who runs a business and is used to working independently, this felt a lot like dealing with external partners or vendors—you can plan ahead, but misalignment still happens. I've learned to be more flexible, to communicate clearly, and to focus on the outcome without getting stuck on the bumps along the way.

This unit helped me connect the dots between clean data, structure, and real-world scalability—especially in a team setting.