IT-214 DATABASE MANAGEMENT SYSTEMS

Title :- Military Database

Project Summary

This project involved creating a comprehensive database system for military operations and personnel management. Below are the key points summarizing our experience, challenges faced, extra efforts, initiatives, and learnings:

Experience and Challenges

Experience: Firstly, working as a team was a great experience by sharing knowledge and ideas we all had. Developing this military database was an enriching experience which required a deep understanding of military organizational structures, data management principles, along with all the minute details about their background.

Challenges: We decided to make our project unique and realistic so we thought of many ideas and rejected many. At last, we finalized this idea as it was very unique and contained real-life solutions. We had to ensure that no redundancies occurred in the database so we had to change our ER diagram every time we faced some anomaly. We also had to update/delete several times the values stored in our database as our understanding got more clear.
We also faced a cyclic foreign key problem where the primary key of one table is the foreign key of another table and vice versa. So we searched through the internet and resolved it by using alter command.
At end, we faced a huge problem as we had whole database into one user's account but we wanted to share and thus changes the conection limit from -1 to 1 after which we could not enter his

database so we copied it and transferred the data into other's database. Thus, we learned that the connection limit is for number of processes you can do at one login and -1 is for infinite.

Real User Inputs: We tried to include values that seemed real to make our database look real and optimistic. We kept the equipments real, the actual wars fought, the awards they received, and even their present status.

Extra Efforts and Initiatives

Normalization: Ensured the database was properly normalized to reduce redundancy and improve the efficiency of the database.

Documentation: We created detailed documentation for the database schema, tables, relationships, and constraints for easy understanding and future maintenance.

Testing: We conducted thorough testing to identify and rectify any potential issues with data insertion, updates, and deletions by working down queries.

Learnings

Data Integrity: We gained a deeper understanding of maintaining data integrity through constraints and relationships.

User-Centric Approach: We emphasized the importance of incorporating real user needs and inputs for a more practical and useful database system. We implemented a Java console application to provide flexible access to the database. This allowed authorized users to interact with the database from various locations, potentially bypassing any network connectivity limitations.

Smart Approach: We also learned python language as it helped us in allocating random values to some of our tuples which were large in numbers and demanded more time and efforts if done manually.

Overall, this project was a valuable learning experience that sharpened our database management skills, especially in the context of military operations. It highlighted the critical balance between complexity in design and usability in real-world applications.