Readings' Review – Format

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SID# 201706985

COMP 4522 – Advanced Databases

1. Summary of the assigned article (a well-thought paragraph will do)

The focus of the article revolves around the history and evolution of databases, tracing the origins from the pre-computer times when humans began to count, write, and store information. It emphasizes the transitional period from manual methods of record-keeping to the emergence of the digital databases as we know them today. Additionally, the article concisely details a variety of changes to how databases interact with data, stemming from the need for better, faster, and more efficient systems as data became more and more ingrained in our everyday lives. Finally, the article poses the idea that as more powerful database systems emerge, and incorporation of databases grows stronger within our society, there may even be a time where the worlds of science-fiction and reality may become less blurred.

2. Short description of key points

Data Definition: The term 'Data' is often used as a singular noun even though it's technically plural. Data can be a variety of things such as numbers, words, or images representing qualitative or quantitative attributes. However, on its own, data lacks meaning—it's just a collection of information without context or relation to other facts.

History of Databases: It explores the historical progression of databases from pre-computer era record-keeping to the emergence of computerized systems, such as CODASYL, IMS, relational models, and object-oriented databases.

Evolution through Decades: The article discusses the development and advancements of databases in the 1960s, 1970s, 1980s, and 1990s, including the commercialization of relational systems, the rise of object-oriented databases, internet usability, and the emergence of XML and ORDBMS.

Future Trends: Anticipations for the future of databases include more complex logic, distributed/federated databases, handling spatial and complex medical data, and adaptation to emerging technologies like cloud computing and mobile applications.

The key takeaway is the continuous evolution of databases from manual record-keeping to highly sophisticated systems, adapting to technological advancements and diverse data needs.

3. What conclusions have you drawn after reading the assigned material?

After reading the material, the most notable conclusions I have drawn focus on how mathematical practices, such as set theory, and logic practices, such as predicate logic, played a much larger role in DBMS than I had previously believed. It had not occurred to me that these practices weren't already foundational after the move from manual to digital systems. I found the material in Codd's paper a bit denser than I would have liked, but it doesn't take away from the importance the work had on modern database systems. I believe after putting into practice the mathematical methods presented in the paper and engaging with the material more visually may allow better insight into his concerns for data management, and the need for dynamic practices as the landscape of data management continues to shift and grow.