

Application of In-Memory Technology to Support Data Visualization in Big Data

Context: ERP Simulation Case

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Abstract:

The purpose of this research is to utilize the in-memory technology in implementing a data warehouse using the SAP ERP Simulation data. Data is a basic necessity in running a business as it is becoming more important and dependable for businesses and organizations. Operational data currently play an important role in running the simulation as part of making critical decisions or adjusting company's strategy. Those data are getting bigger in size as the simulation progresses, so it is essential to have a more reliable data warehouse. The adoption of in-memory technology in data warehouse design and data modeling would not only solve the problem, but could provide numerous benefits. At the end of this research, major components in data warehouse are expected to be created including data mart schema (star schema), tables, and various views needed for data visualization. Furthermore, the data warehouse is expected to connect to and work seamlessly with other different visualization tools, such as SAP Predictive Analysis and SAP BusinessObjects Design Studio.

Reflection on the Learning Experience:

1. Describe your foundational understanding of how research is conducted in your discipline.

The research conducted in my discipline, Information Science and Technology, is somewhat different than most other science based research. A research topic chosen is based on emerging technologies. The goal is to evolve on current research findings. The research process begins with literature review. The main task was to studying and understanding the topic from literature reviews and then apply the knowledge to study human action and interaction to the technology, in-memory computing in this case. Certain data needs to be collected to form evidences to be used to generate research questions and results and lastly to draw a conclusion.

2. How have you expanded your understanding of the informational resources available and how to best use these resources?

I have significantly expanded my understanding of the information resources available after started working on this research project. I was very nervous about looking for resources at the beginning, but things got better as time progressed. I learned where to look for credible sources with peer reviewed articles. At the beginning of my research, I spent majority of my time searching for journals and articles that are relevant to my research just to understand the topic chosen.

3. Describe the knowledge you have gained regarding the fundamentals of experimental design.

The knowledge I have gained regarding the fundamentals of experimental design was tremendous. Prior to starting my research, I had no idea how to design an experimental designs. I learned that experimental designs are important to all the researchers, in which the researcher has control over some of the conditions of the study and control over some aspects of an independent variable being studied. I learned different types of experimental designs, such as randomized experiments and randomized controlled trials (independent variables are manipulated rather than only observed and it is their effect on the dependent variable).

4. Describe how you have learned to interpret the results of your research project.

I've learned how to interpret the results of my research project by using SAP Predictive Analysis to visualize the data collected into something useful that can help me draw a conclusion from the data set as well as see some interesting correlations between variables. Once I see the correlations, I would then write a conclusion based on how that specific variables affect the trend of the graph/chart generated.