**IS-613 72939**

**Fall 2024**

**Database Design Project Phase 2**

**Guidelines**

The goals of this Assignment is for a team based collaborative effort to present the results of your Database Design project to the class and describe how data analytics can be used. It will consist of PowerPoint Presentation. The presentation is to be submitted in Classes by Monday December 2nd and presented to the class on Wednesday December 64h.

This Assignment represents 25% of your final grade.

**Organization and Structure:**

The Project Teams from the Database Design project will work together and share responsibility in developing and presenting the finished product. The assignment is in 2 parts:

1. Complete the Physical Model and Implement User Views
2. A PowerPoint presentation describing your Database Design project and how data analysis tools can help your organization
3. **The Physical Model (Written Submission):**
4. Implement your Relational Logical Model in MS Access (Physical Model)
5. Enter Sample Data in Each Table with at least 10 rows of data per table.
6. Select 5 of 10 Business/User Views from Phase 1and Implement Using Query and Reports (Produce Samples). Select 2 transaction inputs to populate your logical model tables and test against your physical model. **Note: a Logical View must contain at least 2 tables joined.**
7. Describe your steps in translating your logical model to the physical model. **Did you encounter any problems and if so how did you resolve them? What are your main takeaways in achieving this step in the database design lifecycle.**
8. Summary Conclusions Based on Your Design: How Confident are you that your design will meet the originally stated requirements. Describe how you feel about the life cycle process you have undertaken and whether you are comfortable using this approach in designing other database projects.
9. **The Presentation (PowerPoint Submission):**

A Power Point presentation (approx.10 -12 slides) summarizing your research that will be presented in-class on Wednesday December 4th. The presentation should be of 10-15 minutes in length leaving approximately 5 minutes for questions from the other students. **The presentation should be organized in such a way that each team member participates equally. No exceptions.**

The structure of your presentation should be organized as follows:

1. Overview of the E-Commerce business you analyzed.
2. The Database Design you created and the challenges and decisions you made in completing your design.
3. The Data Analysis tool you selected (see below) and a description of its features and capabilities.
4. How the tool can be used with you design.
5. The envisioned benefits of using data analysis to the organization. Give specific examples.
6. Conclusions: Your thoughts on the necessity of good database design and how data can serve as the foundation for effective decision making.

**What Is Data Analysis? (An Overview)**

Organizations tend to grow and prosper as they gain a better understanding of their environment. Most managers want to be able to track daily transactions to evaluate how the business is performing. By tapping into the operational database, management can develop strategies to meet organizational goals. In addition, data analysis can provide information about short-term tactical evaluations and strategies such as these: Are our sales promotions working? What market percentage are we controlling? Are we attracting new customers? Tactical and strategic decisions are also shaped by constant pressure from external and internal forces, including globalization, the cultural and legal environment, and (perhaps most importantly) technology.

Given the many and varied competitive pressures, managers are always looking for a competitive advantage through product development and maintenance, service, market positioning, sales promotion, and so on. Managers understand that the business climate is dynamic, and thus, mandates their prompt reaction to change in order to remain competitive. In addition, the modern business climate requires managers to approach increasingly complex problems that involve a rapidly growing number of internal and external variables. It should also come as no surprise that interest is growing in creating support systems dedicated to facilitating quick decision making in a complex environment.

Different managerial levels require different decision support needs. For example, transaction-processing systems, based on operational databases, are tailored to serve the information needs of people who deal with short-term inventory, accounts payable, and purchasing. Middle-level managers, general managers, vice presidents, and presidents focus on strategic and tactical decision making. Those managers require detailed information designed to help them make decisions in a complex data and analysis environment.

Companies and software vendors addressed these multilevel decision support needs by creating independent applications to fit the needs of particular areas (finance, customer management, human resources, product support, etc.). Applications were also tailored to different industry sectors such as education, retail, health care, or financial. This approach worked well for some time, but changes in the business world (globalization, expanding markets, mergers and acquisitions, increased regulation, and more) called for new ways of integrating and managing data across levels, sectors, and geographic locations. This more comprehensive and integrated decision support framework within organizations became known as business intelligence.

**Links to Data Analysis Tools:**

[Data Visualization | Microsoft Power BI](https://powerbi.microsoft.com/en-us/)

[Business Intelligence and Analytics Software | Tableau](https://www.tableau.com/)

[Data Lakehouse Architecture and AI Company | Databricks](https://www.databricks.com/)

[The Best 10 AI Tools to Analyze Data in 2023 · Polymer (polymersearch.com)](https://www.polymersearch.com/blog/the-best-10-ai-tools-to-analyze-data)

[MonkeyLearn - Text Analytics](https://monkeylearn.com/)

[RapidMiner | Amplify the Impact of Your People, Expertise & Data](https://rapidminer.com/)

[Open for Innovation | KNIME](https://www.knime.com/)