Prof. Ali Tafti: IDS 521, Data Warehousing for Business Intelligence, Final Project Report Guidelines
Spring 2015

Final Project: Dimensional Model Design for a Data Warehouse

The final project is a design exercise. Your project team will write a report that details and justifies a set of dimensional models for a real-world context. This document gives general guidelines on your team project reports, and is not a strict specification. While the total suggested number of pages adds up to ten or less, you may go reasonably below or above this number. You may also use an appendix at the end of your document to refer to additional supporting material, such as sample reports, additional diagrams and bibliography. The appendix will not be included as part of the total page count. The report will be evaluated based on the quality of writing and analysis, how well your design specifications align with your stated objectives, and how well you justify your design decisions.

Please include the names and netids of all team members at the top of your report. You may have three or four students on your project team.

Due date for final report:

May 5, 2015 (This is **strict**—because of the faculty grading deadline, no extensions can be granted).

Project presentation date: Thursday section: April 25. Each group will deliver a short presentation about their project on the last scheduled class session of the semester. Presentation guidelines are listed at the end of this document.

Title: Please be sure to include a title that describes your project.

Overview (1 page or less)

Introduce your project with a statement of purpose or objective. Summarize the goal of your project. You may choose any context of interest – real or fictional. You may also consider existing public data sources as a motivating basis for the project—I will suggest some. Describe the target clients of this project and how it will benefit them. Present any relevant background information that motivates this project.

Description of Data (1 page or less)

Describe the data, where it comes from, and how it is constructed. Describe the main processes and source systems of the data, the most important data fields, and how the data may be used both in operational systems and for business intelligence reporting.

Detailed Enterprise Bus Matrix (1 page or less)

Present a detailed enterprise bus matrix that shows the business processes, conformed dimensions, and granularity for each fact table, and method for updates (slowly changing dimension type).

Dimensional Models and Supporting Arguments (3 pages or less)

Show one or more dimensional models for a data warehousing system. Show the diagram for each dimensional model, and justify your approach. If relevant, explain the type of snapshot used in each case: transaction, periodic, or accumulating. Describe the types of slowly changing dimensions (SCD), and why each is appropriate in each case. Explain any other design decisions.

Sample Business Intelligence Reports (2 pages or less)

Present a set of business questions to be answered by any reports that access your data warehousing system, and specify which dimensional models are accessed in each case. You may show some sample reports in an appendix, and refer to them from this section.

Technology and Implementation (2 pages or less)

Show a diagram of the overall architecture. Describe the extract, transform, and load (ETL) processes that populate your data warehouse presentation layer. Specify the technology vendors and systems to be used for each component of the architecture. For example, what is the role of online analytical processing (OLAP) cubes in your architecture, if any? Would you use Microsoft SQL Server Analysis services for your OLAP engine, or a different vendor's system? What kind of relational database management system (RDBMS) would you use to host your dimensional models, if any? What kind of technology tools would you use to implement your ETL processes? What kind of reporting tools would you use in the business intelligence layer of your system?

Bibliography
Please include a standard bibliography at the end of the paper, and also cite your sources in text. You may refer to material from books, articles, or the Internet. You must cite all sources. Please note that verbatim copying of any source or copying of any diagrams without citation is an academic infraction. Please refer to these sources for more information on avoiding plagiarism:
http://www.library.illinois.edu/ugl/howdoi/plagiarism.html
http://www.library.illinois.edu/ugl/howdoi/integrating.html

You can use any of the common citation styles, MLA, APA or Chicago:
http://www.library.illinois.edu/ugl/howdoi/citations.html

> **Example:** Typically, within the text you would refer to a source with the author and year of publication in parentheses like this (Tafti, Mithas, and Krishnan 2013). This source would be listed in an alphabetically sorted bibliography:
>
> Tafti, Ali, Sunil Mithas, and Mayuram S. Krishnan. "The Effect of Information Technology–Enabled Flexibility on Formation and Market Value of Alliances." *Management Science* 59.1 (2013): 207-225.
>
> **Hint:** If you find the source on scholar.google.com, click the Cite link and it will show you all three styles of citations.

Presentation guidelines

1) Please post your presentation slides on Blackboard by end of the day before your presentation; once per group is fine. Please post it on the special Assignment created for project presentations; and please follow the instructions on how to name your posted file. I will set up the presentations on the computer in advance.

2) Presentation content-- please cover the following: Background and setting of your project, motivation, objectives and business questions, description of data, project plan, enterprise bus matrix, dimensional models, technology and implementation. Here is one way you might structure your presentation in eight minutes: a) Introduction, context, and motivation, b) Description of data, c) Business questions and sample end-user reports, d) Enterprise bus matrix, and e) Dimensional models, and f) Technology and implementation. Presentation time limit is still to be determined.