Database Project Guidelines
Due November 17th, 2016

Introduction

This course requires a database design and implementation project that will be completed in two parts. For Part 1, you will work with a team to analyze, design and load a SQL Server 2012 database using your Systems Analysis and Design project from CIS 3343. For Part 2, you will each individually create multiple SQL scripts and also create the interface for a particular user view of this implemented database.

SQL Server 2014 Database Project Requirements

Your group will take the Final Normalized ERD and divide the tables equally among each of the team members.

Sequence of activities:

1) Each team member will develop the initial Create Table SQL scripts for their own tables. The Create Scripts MUST be done in Native SQL! Failure to do so can result in the failure of this assignment.
2) After success completion, the CREATE TABLE scripts are shared with the rest of the team.
3) Your database is loaded with some test data and then the database relationships are established by all of the team members developing the appropriate ALTER TABLE scripts which are executed against the database.
4) Tables are loaded with the rest of the test data. **This database MUST be loaded with enough data to demonstrate all functionality within your application. Your core tables must have at least 200 or more rows of "realistic" data. Be especially careful that the loaded data adequately reflects the functionality of your database design. This will especially be apparent with the data placed in your associative tables.**
    a. The project team has to develop queries which address all of the organization's mandatory requirements as reflected in your **Project's Problems and Requirements List** that was used in the Systems Analysis class (CIS 3343). The project team also has to develop reports/queries which illustrate the achievement of the overall project objective(s). These reports/queries have to be divided among the team members resulting in each team member developing six (6) Queries against a Join of 4 or more Tables.
5) Each team member will also develop six (6) unique Update Scripts according to the following guidelines:
    a. 2 Insert Scripts
    b. 2 Delete Scripts
    c. 2 Update Scripts

    NOTE: For each of these scripts, you must show a before and an after image of the table to illustrate the results of the scripts.

6) Each team member will develop a minimum of 5 Forms/GUIs using JAVA which pulls data from the SQL Server 2014 Database. Each group will need to have an overall Master GUI for the entire application so that it can be used for your Presentation Demo.
7) **It is imperative that your Database Application be a working JAVA application that gives your users the ability to Add, Change and Delete any and all of the attributes within any of the tables**.

Grading

See the Posted Project Rubric which appears on Blackboard Learn to get a detailed breakdown of grading.

Project Grade (40% of overall Final Grade for course)

Database Design Group Project	20%
Database Implementation Individual Project	15%

Required Team Status Reports

Starting on Thursday, September 8th, 2016 each team must submit an electronic Weekly Team Status Report by 6 pm each Thursday. These Team Status Reports must show all of the team activities broken down per deliverable. Each deliverable must also show the total number of hours that each team member worked on each specific deliverable. The Status Report should also state whether or not the deliverable is complete. If not complete, then the team needs to estimate the number of hours left for completion for that specific deliverable. The Status Report should not exceed a page in length. These Weekly Team Status Reports need to be done during the entire length of the project, with the Final Status Report submitted on Thursday, April 21st, 2016. **Teams also need to bring a paper copy of their Weekly Status Report to every Thursday night class.**

Presentation Requirements

Each team delivers an oral and visually interactive project presentation of your proposed database design using appropriate visual aids and handouts. There will be a drawing to determine the time slot and data for your team's presentation.

Each presentation should last about 40 to 50 minutes. Setup for all presentations must be completed by the beginning of class. The team presentation grade is determined by the quality of each presentation including efficient use of time, clarity of presentation, completeness, and content. **Each member of the team has to actively participate in the presentation**.

Each presentation must be a compelling demonstration that the group's database and corresponding GUI application solves the mandatory requirements for their client. The overall database design must also be communicated to the class in order for the class to understand how the database design supports the client's business rules needed to achieve the client's overall system objectives.

Group Database Implementation Project Report

The group project report must include the following elements separated by tabs:

- **Title Page** with the client's name, the project name, team name, and the team member names
- **Table of contents** (using Word's TOC functionality)
- **Executive summary and Introduction**: An overview of the objectives for the project, a listing of the current business problems and challenges, and a summary of your analysis which lead you to the following solution.
- **Benefits and Costs –** estimate the specific benefits and costs of implementing this database for your client. Your figures have to reflect Total Cost of Ownership which includes ALL benefits and costs from development to retirement of the application.
- **Project Approach** – document the database design and implementation process that you followed during the semester. You must also summarize the work from the Analysis class.
- **Solution**: How does your solution satisfy the business needs/requirements?
  At minimum include the following:
  - A description of all required forms and reports (Samples of all Queries, Forms, and Reports are to be included as attachments)
  - List all key decisions made to your database design from the original group design at the beginning of the semester. You must show at least 5 sections of your database ERD and discuss how your entity and relationship choices solved a particular aspect of your client's business rules.
- **Testing Process** – describe your team's protocol for testing usability of the database and the application and revisions made as a result of testing.
- **Project Improvements** – List useful features and options that you did not implement in your database application but could be implemented in a later release of the database. You must also state the priorities of the improvements.
- **Project Database Maintenance Issues** – list the ongoing maintenance procedures that should be conducted on an ongoing basis if this application were to be put into production status. Make sure you discuss issues such as: data cleanup, backup and recovery, maintenance of lookup tables and data archival.
- **Lessons Learned**: Discuss what you learned in this project, any unusual situations you encountered, and what you would do differently on the next project of this type.
- **Project Summary** – brief recap of the project. Not to exceed one page.
- **References**: Cite any and ALL sources you used.
- **Appendices:**
  - ERD with primary keys and relationships only
  - ERD with all attributes and relationships
  - Data dictionary
    - Description of each table, what it represents, and the purpose it serves in the business
    - List of attributes for each table
    - Primary keys and foreign keys
    - whether the attribute is required
    - whether the attribute is nullable
    - default values and domain of each attribute
    - attribute constraints or validation rules
    - cascade deletes or updates deemed necessary
  - Copies of All Queries, Forms and Reports
  - Printout of all the data loaded into each table
  - Updated Problems and Requirements List
  - A copy of all status reports with a Final Summary of Project Hours per person

Individual Database Implementation Project Report

The Individual Implementation Report will be submitted in two stages.

The Individual SQL Scripts, Individual Queries/Reports and listing of Data Created will be submitted on **October 27th, 2016** via one binder for the entire group. Each team member will have their own section with each team member responsible for putting in their content behind their Section Tab.

On **November 17th, 2016** each team member will update their section of this binder to show their contribution to the overall GUI.

Each team member must include their individual work so that all of the individual work for all team members can be combined into one big binder. There must be tabs to separate all of the different individuals.

- Individual SQL Scripts per team member
  - Copies of all Create Scripts
  - Copies of all Alter Scripts
  - Copies of all Bulk Load Data Scripts
  - Copies of all Data created
  - Copies of all SQL Queries (6 per team member)
  - Copies of all SQL Update Scripts plus a before and after image of the impacted table(s) (6 per team member)
- Individual Queries/Reports against a Join of 4 or more Tables
  - Each team member will develop six (6) Queries. Each query or report must be against a Join of 4 or more Tables. For each Report or Query that you developed, you must describe the report and state the business problems that are being addressed via this Report/Query. **Specifically state WHY your client would want to use this Report/Query.** You also have to show the results of each query by including a screen shot of the results.
  - Reports have to be unique to the team and each team member.
  - **Each query developed has to also be a reporting option on the team's overall GUI.**
- Individual User Views per team member
  - Printout of all Forms/GUIs developed by the team member.