

# MIS 302 – Team Project Phase 3

Due April 27

## Deliverables for Phase 3

- Given the deliverables of the previous phase and the feedback obtained from your instructor, revise your Phase 2 (ER model, business rules, etc.), convert your ER model into a relational schema and go through the process of normalization. This step will require the team to list all of the functional dependencies.
- Using SQL's Data Definition Language, implement the database in Oracle from the normalized set of relations created in the previous step. Whenever applicable, provide data integrity controls on the domain of your attributes (e.g., a GPA can only take numeric values between 0 and 4).
- Using SQL's Data Modification Language, populate your tables with data. You should enter sufficient data to the database such that the need for a database is clear. In other words, you need to provide enough examples to demonstrate why a database was required in the first place. (At least 10 records for the main tables.) For each table, one of these records needs to be entered using SQL. The rest can be entered using forms for your convenience (see next item).
- Link an MS Access blank database to the Oracle database and save it in one of the team members' M drive. Forms and reports can then be created using MS Access on top of the Oracle database. Users should be able to enter all data via forms. You may create your forms and reports by using the wizards. However, in order to ease data entry, all foreign keys in your forms should be made a combo box that refers to the right row source. Design an easy-to-use switchboard for the database. (Caution: You may have to re-link the tables in Access to your Oracle database after you log off.)
- Prepare the final report that should include:
  - A separate cover page.
  - Table of contents with only the following subject headings: Project Proposal, ER Diagrams, Entity and Attribute Definitions, Relationships, Weak Entities (if applicable), Generalization Hierarchies (if applicable), Business Rules not Captured by ER Diagram, Relational Schema and Normalization, Data Dictionary, SQL Implementation, Queries, Forms, Reports, Conclusion, and Appendix.
  - The project proposal (updated if the focus of the project has changed).
  - Revised items of Phase 2 (ER Diagrams, Entity and Attribute Definitions, Relationships, Weak Entities (if applicable), Generalization Hierarchies (if applicable), Business Rules not Captured by ER Diagram).
  - The collection of normalized relations and functional dependencies, and a brief discussion as to the normal form(s) achieved, the methods used to achieve these normal forms, and reasons why any de-normalization was done. (Discuss whether your tables are in 3NF).

- A listing of the metadata for each table in the database. Describe attributes using a data dictionary (see pp. 233, Table 6.3 and pp. 293, Table 6.12).
- Provide the SQL code you used to implement the database.
- Six to eight key queries. Provide the associated SQL statements and each query's output (use Oracle's spool function).
- A list of your forms, including at least one multiple table form (master-detail with the multiple detail records on the many side of the relationship); please note which form(s) is the master-detail form.
- A list of your reports. Have two to three reports, including at least one multiple table report (master-detail). Provide a sample printout.
- A conclusion that explains whether the benefits can be realized by the new system. Discuss also the integrity controls you have in place about the domain of attributes.
- In the Appendix, include your graded Phase 1 and Phase 2 documents.
- Also in the Appendix, provide a copy of your linked Access database in a disk or cd. Indicate the uniqueid and password. Before submission, change the password using the following command in SQL\*Plus: **ALTER USER [uniqueid] IDENTIFIED BY [newpassword];**
- Report separately the team's experience with the project.
  - In the first section, describe how the decisions you made at each step affected your work in the next.
  - In the second section, discuss the following:
    - Which steps were the most difficult? Which were the easiest?
    - What did you learn that you did not imagine you would have?
    - If you had to do it all over again, what would you have done differently?
    - Final comments and conclusions.

The rubric that I will use for grading is provided on the next page.