New York University
Computer Science Department
Courant Institute of Mathematical Sciences

Assignment #6 – Database Systems Project – Logical Schema Optimization

Due Date: 04/27/15

Course Title: Database Systems
GA.2433-001
Instructor: Jean-Claude Franchitti

1. Ongoing Project Background

Many businesses have the goal to establish an Enterprise Data Architecture (EDA) and to promote subsequent activities related to the integration of existing and new projects with the EDA. There are typically three separate efforts that are part of the creation of an EDA.

- Modeling – Creation of a diagram and/or blueprint that support(s) the design of enterprise storage systems
- Operational Data Store (ODS) – Creation of physical database(s) that conform to the model.
- Roadmap – Means to move applications / operations to integrate with the ODS

The first part of the project focused on conceptual modeling and led to the creation of a documented entity-relationship diagram using a mainstream software tool. The resulting model was partially validated against a set of business requirements and rules and amended as needed. This next portion of the project focuses on the creation/generation and optimization of a logical database schema for the conceptual model created earlier.

2. EDA Logical Schema Optimization Questions

1. Create and/or generate a logical schema that corresponds to the entity-relationship conceptual model developed earlier as part of this project. Please note that the tool you used to create the conceptual model may provide support to facilitate the generation of a logical schema for a database system of your choice. Please make sure that you select the database system target that corresponds to the database product you plan to use to manage and store data as part of your project solution.

2. Optimize your logical schema and provide details as to the reasoning behind each one of the optimization steps you are taking. Please note that optimization in this context includes normalization.

3. Deliverables
Please provide an electronic copy of your homework submission as one zip archive by sending it to the course TA by the assignment deadline as noted. The archive should include your E-R model and your homework report (in word or text format). You should name your archive using the following convention for the homework archives: lastname1_lastname2_hw6_fa11.zip. You are also required to provide a hard copy of your homework report at the beginning of the class session on the date the homework is due.

4. Grading

All project assignments are graded on a maximum scale of 10 points. Your grade will be based equally on:

   a. The overall quality of your documentation.
   b. The understanding and appropriate use of database systems related technologies.
   c. Your ability to submit well documented solutions.
   d. Extra credit may be granted for solutions that are particularly creative.

5. Additional Information

If you have not already done so, please let the TA know as soon as possible about teaming arrangements (only two people per team). You will need to stay with the same team for the duration of the course. You should only submit one report/archive per team for each assignment. To balance things out, the final grading for the course project will take into account the fact that you are working as a team instead of individually, so you should feel free to work individually as well.