NOMO Auto Group Problem, Part II  
IST 210, Section 1, SP 2004  
Part II

Introduction to the Problem
The purpose of this problem is to implement the database solution you modeled in Part I of the NOMO Auto Group Problem. In Part II of the NOMO Auto Group problem, you will: (1) complete the write-up you began in Part I, (2) create the DDL to implement the database, (3) define prototype queries and create the appropriate DML, and (4) provide and demonstrate your SQL code. You will implement your solution using DB2.

The remainder of this document has been organized to provide each team with the guidelines and many of the resources you will need to get started with the project. The remainder of the document includes the following:
- Problem Assignment
- Problem Objectives
- Outline of Associated Topics
- Scope of Work (SOW)
- Performance Metrics
- Contents of Final Deliverable Document
- Contents of Final Deliverable Presentation
- Problem Resources

Problem Assignment
The goal of NOMO Auto Group Problem, Part II is to implement the database that your team designed in Part I of the NOMO Auto Group Problem.

Problem Objectives
After completing this problem, you should be able to:
- Operate as a team
- Refine the design a database that meets the needs of the organization
- Identify the target audience queries
- Implement techniques for assuring the integrity of the data

Outline of Associated Topics
The topics covered in the Problem are:
- Topic 4: Refining the Design
- Topic 5: Implementing the Design
- Topic 6: SQL
Scope of Work
- Review, refine, and document NOMO AG’s the business rules
- Define and develop at least five examples of SQL code that: (1) maintain database information (e.g., update, delete, and/or modify) and (2) query sales information (e.g., what salesperson has sold the most cars during the past year)
- Define and implement appropriate integrity constraints
- Refine your data model
- Normalize your tables as needed
- Develop the DDL to implement the design
- Develop the DDL to load representative example data in your

Deliverables
The contractor will deliver the following:
- A project report as per the provided outline
- SQL code to create the database and the appropriate business rules encoded as constraints.
- SQL code to load contractor created example data
- SQL code for a minimum of five prototypical queries

Performance Metrics
Your development team will be measured against the following performance metrics:

<table>
<thead>
<tr>
<th>Goal</th>
<th>Conditions</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document database design, development, and testing (Project Report)</td>
<td>Given background information from Part I, the data design proposal briefings, and queries you develop</td>
<td>The report accurately documents the purpose, process, and results</td>
</tr>
<tr>
<td>Review and improve the conceptual database design you developed on Part I of the problem</td>
<td>Given background information from Part I, the data design proposal briefings, and queries you develop</td>
<td>Database design supports information needs of the prototype queries</td>
</tr>
<tr>
<td>Implement data design</td>
<td>Using SQL and the IBM DB2 DBMS environment</td>
<td>SQL code successfully creates the database tables and implements integrity constraints in the DB2 environment</td>
</tr>
<tr>
<td>Testing</td>
<td>Using the queries your team developed</td>
<td>Queries return the appropriate results while adhering to integrity constraints</td>
</tr>
</tbody>
</table>
Suggested Project Report Format
As a deliverable your team will provide a project report. A suggested format is outlined below:

I. Report Cover
The cover includes the following:
1) Title
2) Class Section
3) Instructor Name
4) Company Name, Address, and Telephone Number
5) Date of Submission
6) Any other Relevant Data

II. Table of Contents
The table of contents outlines the major document headings and subheadings.

III. Executive Summary
Create a one-page summary of project’s report.

IV. Project Overview
A. Scope of Work (SOW)
Discuss the projects Scope of Work as you understand it.

B. Business Need and Impact
Identify the potential business needs and impacts a centralized database may have on NOMO Auto Group:
- Change Management issues
  o Change management issues with moving to a new system
  o Employee reactions to the new system
  o Potential problems
- How the new database changes their current processes such as:
  o Inventory control
  o Tracking sales
  o Salesperson contact information
  o Other Business Process Benefits
- Provide a statement of benefits

V. Planning and Resources
A. Database Lifecycle
Discuss of the phases you undertook when completing the database design. Include:
- Initial study
- Database design
- Coding
- Testing and evaluation
B. Personnel Resources
Identify the resources used to implement the database including the following:
- The personnel used to complete the database design and development, the time spent on the project and job roles
- Anticipated personnel tasks not covered or completed in this SOW

VI. Analysis of the Audience
A. Audience Analysis
Provide a description of:
- The company situation including the operating environment and organizational structure
- Known problems and technical requirements
- Automation objectives
- System scope and boundaries
- Review and document NOMO AG’s the business rules
- Document at a minimum five queries, forms, or reports that can be used to test and validate your database design and implementation

B. Data Analysis
Develop and provide a discussion of the following:
- Information needs and the associated users
- Data sources
- Interfaces with other systems
- Data constraints

D. Data Access and Security
Discuss limitations to access to the data and data secure.

VII. Database Design
Discuss the design of the database by documenting the following steps:
- Analyze and refine the business rules
- Identify the main entities
- Identify the relationships among the entities
- Identify the attributes, primary keys, and foreign keys for each of the entities
- Provide an E-R diagram
- Discuss your E-R diagram verification and resulting modifications
VIII. Database Implementation (No more than 3-4 pages)

A. DBMS Selection
   • Examine the specification and requirements relative to the required DBMS (i.e., DB2)
   • Review the selected DBMS data model environment and modify the Entity-Relationship diagram as necessary

B. Develop and Document the Logical Database Design
   • Discuss lessons learned converting the E-R Diagram to tables
   • Discuss normalization and, when appropriate, denormalization
   • Test the normalized tables
   • Discuss lessons learned and iterative refines you made to meet user needs

C. Coding
   Document the SQL used to create the database:
   • Discuss the SQL code used to build the data structure
   • Discuss the encoding of business rules as referential integrity
   • Discuss the encoding of business rules as entity integrity rules

D. Testing and Validation
   • Discuss testing and the validity of the solution
   • Document any design deficiencies
   • Discuss future refinements of the design

IX. Organizational Planning
   • Discuss anticipated organization-wide integration with NOMO AG’s business processes and systems
   • As appropriate, provide a discussion of anticipated technical, managerial, legal, and ethical issues involved full implementing

X. List of References
   Your team must compile a list of references that were used to help create your proposal document. This list of references should follow either the MLA or APA format. This section should not be considered part of the overall page count for the document.
Contents of the Proposal Presentation

Your team is required to present your solution to the NOMO Board of Directors. You are encouraged to use Microsoft PowerPoint or another comparable technology to supplement the presentation. This presentation will be used for you to demonstrate your understanding of the problem and present your solution to the Board of Directors. During the presentation, you should highlight the major points of your solution and present a convincing justification as to why your company and solution should be chosen by the Board of Directors. This is the opportunity for your team to demonstrate that you are the best one to do the job!

Be prepared to answer questions from the Board. Your instructor will give you specific details around the length of the presentations and when/where they will occur. Presentations should last no longer than 10 minutes.

For more information on the grading criteria, consult the Problem Objectives and Problem Rubric.

Your presentation should include, but is not limited to, the following information:

1) A team introduction and background as to why you should be selected.
2) An oral summary of the proposal document you are provided.
3) An opportunity to answer questions.
# NOMO Auto Group Document Rubric

Name:

Date:

Directions: Give each team a score out of the possible points for each major Topic area. Portions of a point may be given. Total the score at the end and provide feedback.

<table>
<thead>
<tr>
<th>Topic Area</th>
<th>Possible Points</th>
<th>Points Scored</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deliverable: Project Report</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>2. Deliverable: Demonstration of SQL implementing the database design</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>3. Deliverable: Demonstration of the SQL used to load example data</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>4. Deliverable: Demonstration of at least five (5) database queries</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL POINTS</strong></td>
<td><strong>100</strong></td>
<td></td>
</tr>
</tbody>
</table>

Things that stood out about this document:
**NOMO Problem Presentation Rubric**

Name:

Date:

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<tbody>
<tr>
<td>1. NOMO Design and Creativity</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2. Presentation Content</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>3. Audience Response/Sales Tactics and the Decision</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>4. Speaking Skills and Organization</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL POINTS</strong></td>
<td><strong>50</strong></td>
<td></td>
</tr>
</tbody>
</table>