Final Project Report Requirements

1. Cover Sheet

2. Table of Contents

3. Executive Summary

4. Requirements Definition: including a text and a concept map requirements model.

5. Functional Model: The functional model should be comprised of an activity diagram, a use case diagram, and a set of detail use case descriptions for each use case. Any assumptions that you make must be made explicit and approved by me.

6. Structural Model: The structural model should be comprised of a class diagram. Each class in the class diagram must include all relevant attributes and operations.

7. Behavioral Models: The behavioral models should include both sequence and communication diagrams (one for each scenario of the use cases in the use case diagram), a behavioral state machine for each concrete problem domain class, and a CRUD matrix.

8. As a first step toward developing a design of the system, you should evolve the analysis models into design models by carefully verifying and validating the analysis models and by creating a Package Diagram for the problem domain layer. The Package Diagram can serve as a mechanism to identify potential patterns and/or components. Also, for each problem domain class, you need to include a set of invariants for the attributes and relationships and add them to the class description. Finally, for each non constructor, get-, or set-method, you should create a contract and a method specification. If the “algorithm” for the method is simple, use Structured English for the algorithm specification. On the other hand, if the algorithm is complex, you should use an activity diagram to specify it. Once you have completed are ready to proceed with the design of your solution.

9. Apply the coupling, cohesion, and conscience design criteria to improve/optimize your class design. Re-exam the sequence diagrams/communication diagrams to further improve the design. Add method specifications, and contracts and constraints when applicable.

10. Based on the design of the problem domain layer of the application, you should design the data management layer. In this case, the data management layer should be comprised of data access and manipulation classes and a relational database. You should use class and communication diagrams to describe the connectivity among the classes on the problem domain and data management layers.
Optional: Be sure to apply the rules of normalization to the relational database to ensure processing efficiency and to develop a clustering and indexing strategy for the relational database.

11. Based on the design of the problem domain layer of the application, you should design the human computer interaction layer. You should develop a Windows Navigation Diagram, Windows Layout Diagrams, a storyboard, real use cases, and an HTML prototype, that simply demonstrates the interaction.

12. Based on the above, use a deployment diagram to layout a three-tiered architecture design of the system. Assume that the system will be deployed using a client server architecture with the GUI being deployed onto client machines using WWW technology, the problem domain layer will be deployed on an application server, and the database will be on a separate database server. You should use class and communication diagrams to describe the connectivity among the classes on the problem domain, physical architecture, data management, and human computer interaction layers.

13. Requirements for Extra Point Project Data Warehouse.

Add the parts for Data Warehouse to your Project in the followings:

You may make each Data Warehouse component in a separate diagram in the following as well.

1. System Requirement

2. Use Case Diagram/Description

3. Sequence Diagram

4. Database/Data Warehouse Diagram

Note that the purpose of building Data Warehouse is mainly for Retrieval only Data Analytic Queries.

It should be built on top of your database.

It shouldn't change the operational functionalities of your project.

Main actors of Data Warehouse System are NOT the major actors (Customers) of your project.

All the requirement report of Data Warehouse should be in your project report (Due by May 6).