Group Project 5: "ERD, Database design, Software and Hardware"

Part 1 Chapter 9 Personal Trainer, Inc.

Personal Trainer, Inc. owns and operates fitness centers in a dozen Midwestern cities. The centers have done well, and the company is planning an international expansion by opening a new “supercenter” in the Toronto area. Personal Trainer’s president, Cassia Umi, hired an IT consultant, Susan Park, to help develop an information system for the new facility. During the project, Susan will work closely with Gray Lewis, who will manage the new operation.

Background
After evaluating various development strategies, Susan prepared a system requirements document and submitted her recommendations to Cassia Umi, Personal Trainer’s president. During her presentation, Susan discussed in-house development and outsourcing options. She did not feel that a commercial software package would meet Personal Trainer’s needs. Based on her research, Susan felt it would be premature to select a development strategy at this time. Instead, she recommended to Cassia that an in-house team should develop a design prototype, using a relational database as a model. Susan said that the prototype would have two main objectives: It would represent a user-approved model of the new system, and it would identify all systems entities and the relationships among them. Susan explained that it would be better to design the basic system first, and then address other issues, including Web enhancements and implementation options. She proposed a three-step plan: data design, user interface design, and application architecture. She explained that systems analysts refer to this as the systems design phase of a development project. Cassia agreed with Susan’s recommendation, and asked her to go forward with the plan.

Tasks
1. Review the Personal Trainer fact-finding summary in Chapter 4 and draw an ERD with cardinality notation. Assume that system entities include members, classes, merchandise, and fitness instructors.
2. Design tables in 3NF. As you create the database, include various codes for at least three of the fields.

Part 2 Chapter 10 Personal Trainer, Inc.

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Background
Susan and Gray finished their work on user interface, input, and output design. They developed a user-centered design that would be flexible and easy to learn. Now Susan turned her attention to the architecture for the new system. Susan wanted to consider their own organization and culture, enterprise resource planning, total cost of ownership, scalability, Web integration, legacy systems, processing methods, security issues, and corporate portal. She also needed to select a network plan, or topology, that would dictate the physical cabling and network connections, or consider a wireless network. When all these tasks were completed, she would submit a system design specification for approval.

Tasks
3. What software and hardware infrastructure will be necessary to ensure Personal Trainer can process point of sale transactions?
4. Prepare an outline for a system design specification and describe the contents of each section.