INFOST 340 Systems Analysis
Instructions for the Systems Analysis

Relationship of the Proposed Solution to the Project Report
The Project Report is a three-part assignment that provides you with an opportunity to demonstrate all of your systems analysis skills on a case scenario. This document provides the instructions for writing the second part, the Systems Analysis. The instructions for the remaining two parts are provided in separate documents.

Case Scenarios and Group Support Rules
Five case scenarios have been created and published. This number is sufficient that no two students in the same group will be assigned the same case scenario. The case scenario assigned to each student will be indicated, and case scenario documents will be published before work on the case begins.

This use of multiple case scenarios will allow members of the same group to confer with each other regarding their work without sharing their work product with another student who is solving the exact same problem. As stated in the course syllabus, students are encouraged to review the work of their team members and make suggestions for improvements. While students **are allowed** to exchange work with and confer with other students in their own group who are working on a different case scenario, students **are not allowed** to exchange work or confer with members of other groups who are working on the same case scenario.

Systems Analysis Document
This should be a business document that combines professional prose and diagrams that conform to the standards taught in class. The document should follow the outline provided below. **These outline headings should be included in your text in bold type** in order to make your work easier to find while grading. Although the outline below includes some questions that should be addressed in some sections of the report, please do not answer these questions individually as though filling in questions on a test. Instead, use your writing skills to write a professional report that addresses the issues and questions that have been identified.

Also, please note that this document includes a fairly large number of sub-documents. Some of these sub-documents are textual. Others are diagrams. You are expected to combine these into a single document that is arranged in the proper order before submission. I typically accomplish this task with Adobe Acrobat Professional. If you need help in finding a solution to this need, please contact me.

Systems Analysis Outline

Note: Your systems analysis document must follow this outline and include these headings in bold type.

1. **Context Diagram**
   - The context diagram must describe the extent and limits of the automated system scope.
   - The context diagram should conform to the same standards as used in the skills practice assignment.

2. **Use Case Diagram(s)**
   - The use case diagram(s) must describe the extent and limits of the automated system scope.
   - Multiple diagrams may be used to arrange use cases into packages.
   - The use case diagram must conform to the same standards as used in the skills practice assignment.
   - The use of relationships between use cases (extend or include) is discouraged. If used, these features must be used properly.
   - Remember to include both business-oriented and administration-oriented use cases. These include user authorization and login.

3. **Use Case Specifications**
   - Specifications must be provided for at least three (3) non-trivial use cases ("business use cases").
   - Specifications must be created with the template provided in class.
   - Specifications must conform to the same standards as used in the in-class skills practice assignment.

4. **Activity Diagram**
   - At least one activity diagram must be provided that illustrates a non-trivial scenario from one of the use case specifications included above.
   - The diagram must conform to the same standards as used in the skills practice assignment.
   - Remember that this is not just any activity diagram. It is an activity diagram that illustrates one use case scenario for one of the use cases for which you have created a use case specification.

5. **Non-Functional Specifications**
   - This section should document all relevant non-functional requirements that are not otherwise documented in the use case specifications.
   - The section should be organized appropriately for its length and complexity.

- The section must conform to the same standards as used in the in-class skills practice assignment.
- Use of the template that was provided for the group practice exercise is encouraged.

6. **Physical ERD**
   - This diagram should present a physical data model of the data that must be persisted in the system to support the functional requirements.
   - The notation should follow the approach taken for the Physical ERD skills practice assignment.
   - Relationships should be named and include the cardinality indicators at both ends.
   - To implement relationships, a foreign key must be shown on at least one entity types that participate in the relationship.
   - Because this is a Physical ERD that will be used for relational database design, no many-to-many relationships can remain in the diagram. These should all be replaced by associative entities.
   - Repeating attributes and repeating groups of attributes must be removed from the entity types and moved into "weak entity types". If the resulting structure results in a many-to-many relationship, then it must be resolved using an associative entity.
   - The data model that you submit should be normalized to third-normal-form.

7. **State-Machine Diagram**
   - One diagram must be provided that illustrates an important set of states and transitions in the application.
   - The diagram should conform to the standards used in the skills practice assignment.

Document Length

The total length of this document is variable. It is important that all discussion items be written professionally in business-like prose. Diagrams and specifications must be complete and their number must conform to the directions above. All of these items must be combined into a single PDF document.

Format

A single PDF document. Any other format must be approved by the instructor before submission.

File Naming Conventions

The name of the file which you submit should be consistent with the following model:

lastName_firstName_systems_analysis.pdf

Submission Deadline
The submission deadline and dropbox to which the assignment should be submitted will be indicated in the Weekly Schedule.

Grading
A separate grading rubric document will be posted in the Weekly Schedule.