CMIS 330 SDD Project

Scenario

You have been asked to lead a software development team to build a system fulfilling the Statement of Need specified in project 1. Your team is employed by a small company. The customer wants a project that balances reasonable development cost, timely delivery, software quality, and functionality.

In this project, you will refine your analysis, scenario and behavioral models from projects 1 by:

- Describing the interface and component-level design for the B&B software
- Updating your Architectural Context Diagram (ACD)
- Updating your analysis models from project 1.

Completing this project will require that you produce a software design document (SDD) that shows how the system shall be structured to satisfy the requirements described in your SRS. The **SDD that you create will have consequences for Projects 3 and 4.**

SDD Templates

Please use the IEEE std 1016-1998 to develop your SDD. The **IEEE Recommended Practice for Software Design Descriptions,** standard 1016 is posted in the **Reserved Readings** section on the **Class Menu.** Read this to become familiar with the information required in the SDD. Annex A, figure A.1 gives a sample SDD Table of Contents. Use this as a general outline.

The assignment

1. Complete the template as best as you can. Make any reasonable assumptions based on your understanding of the problem that allow you to address as many sections of the SDD template as possible. (Please read the "project descriptions" in the project description section of the syllabus for additional context and information on course projects).

2. Pay special attention to the following phases of design as you complete the SDD template. The bulk of your grade will be decided on how well you address these issues.

- **Data Design**: This phase produces the data structures
- **Architectural Design**: This phase produces the structural units, or classes.
- **Interface Design**: This phase specifies the interfaces between the units
- **Procedural Design**: This phase specifies the algorithms of each method.

Note that specific sections of the SDD template speak to the above 4 design phases.

A key objective in the design phase is to translate and map the outputs or deliverables from the requirements model into the four design models (See Module 3, Figure 3.8 of the course module commentaries).

3. **Hints and suggestions**: At a minimum, I expect:

- An updated **data model** (class diagram or ERD) from project 1. Represent the data model as a data dictionary so that you can reflect the attributes of the object.
- An updated **Architectural Context Diagram** (ACD).
- **Software interface description**: Perform an interface task analysis for B&B. The goal is to identify and define the interface objects and the actions that are applied to them. You need to specify the component-to-component interfaces (how they are connected) and the human-to-computer interface (textual description of the interface for each user type). (See our online conference discussions on interface design. Also, review the Interface Design Principles and Guidelines outlined in the basic rules for HCI (Human-Computer Interaction) Design noted in the Module 3 commentaries for more on user interface design). Include the following as part of your response:
  - **A graphical user interface** for B&B that shows (1) Layout of the objects for the primary user interface (e.g., buttons, menus, images) and a description of their function and (2) Relevant information and flow of information to be displayed to the customers (e.g., rooms, calendar).

- An updated ACD that maps to your updated **DFD** from project 1 (refined to its lowest possible level) to illustrate the major processes necessary to implement the functionality. Make sure you provide supporting textual descriptions for all processes in the **Level 1 DFD**. You may need to add a **Level 2 DFD** to ensure sufficient detail. (See Module 3: Methodologies and Application Domain Issues. Figure 3.4—Level 1 and Level 2 DFDs for Self-Service Checkout System for an example of what is required). When drawing your DFDs remember to adhere to the guidelines specified in Figure 3.4 of Module 3.

4. Document is well-organized, contains minimal spelling and grammatical errors.

You should name the file yournameSDD.docx (or yournameSDD.pdf). So if my name was Julie Smith, I would name my document juliesmithSDD.docx.

Your name should be clearly listed on the first page along with the class/section, professor and due date.

Your document should contain page numbers at the bottom of each page. Single or double space line formatting is acceptable. All references used for your report should be included in APA style format. See the following APA reference guide for details on how to cite your references:

http://www.umuc.edu/library/libhow/apa_examples.cfm

Your charts, illustrations and diagrams can be done using any word processing, drawing, and/or software CASE drawing tool (or by hand) as long as it is neat and organized.

Embed or scan any diagrams that you create in your SDS document—do not upload them separately.

Grading Rubric

Attribute	Meets	Does not meet
SDD content	**25 points** Includes well-written sections for Data Design, Architectural Design, Interface Design, and Procedural Design.	**0 points** Does not include well-written sections for Data Design, Architectural Design, Interface Design, and Procedural Design.
Updated data model	**10 points** Contains an updated data model (class diagram or ERD) from project 1.	**0 points** Does not contain an updated data model (class diagram or ERD) from project 1.
Updated Architectural Context Diagram	**20 points** Contains an updated Architectural Context Diagram. The ACD maps to your updated **DFD** from project 1 illustrating the major processes necessary to implement the functionality. Provides supporting textual descriptions for all processes in the **Level 1 DFD**. DFDs adhere to the guidelines specified below Figure 3.4 of Module 3: Methodologies and Application Domain Issues.	**0 points** Does not contain an updated Architectural Context Diagram. The ACD does not map to your updated **DFD** from project 1 illustrating the major processes necessary to implement the functionality. Does not provides supporting textual descriptions for all processes in the **Level 1 DFD**. DFDs do not adhere to the guidelines specified below Figure 3.4 of Module 3: Methodologies and Application Domain Issues.
Software Interface	**25 points** Performs an interface task analysis for B&B. Specifies the component-to-component interfaces and the human-to-computer interface. Includes a graphical user interface for B&B that showing the layout of the objects for the primary user interface and relevant information and flow of information to be displayed to the customers.	**0 points** Does not perform an interface task analysis for B&B. Does not specify the component-to-component interfaces and the human-to-computer interface. Does not include a graphical user interface for B&B that showing the layout of the objects for the primary user interface and relevant information and flow of

		information to be displayed to the customers.
Documentation	**20 points** Document is well-organized, and contains minimal spelling and grammar errors. The student's name is clearly listed on the first page along with the class/section, professor and due date. The document contains page numbers at the bottom of each page. Single or double space line formatting is used. APA style format is used for references. Diagrams are embedded or scanned into the document.	**0 points** Document is not well-organized, and contains minimal spelling and grammar errors. The student's name is not clearly listed on the first page along with the class/section, professor and due date. The document does not contain page numbers at the bottom of each page. Single or double space line formatting is not used. APA style format is not used for references. Diagrams are not embedded or scanned into the document.