**Stage 2: Requirements Specification**

Before you begin this assignment, be sure you have read the Case Study and all assignments for this class, especially Stage 4: Final System Report. The feedback you received on your Stage 1 assignment should be reviewed and used as you proceed with Stage 2.

**Purpose of this Assignment**

This assignment gives you the opportunity to specify clear and concise requirements, including the use of data and process models, for a system that enables a productive change in a way the business is conducted. This assignment specifically addresses the following course outcomes to enable you to:

* apply a systematic approach to translate requirements into an executable systems design
* effectively communicate with stakeholders to determine, manage, and document business requirements throughout the SDLC
* perform modeling to assist with analysis and decision making

**Assignment**

The results of your systems analysis and design work in this class will be documented in a Final System Report. The purpose of the Report is to inform management of your system proposal and gain approval to proceed with the project. The Report will be developed and submitted in stages, which will be compiled at the end of class into the Final System Report. Review the outline of the Final System Report in the Stage 4 Assignment description. Note that it contains the analysis of the problem(s) and requirements, and proposes what kind of a system solution is needed. It does not propose a specific solution, but it does recommend why and how the organization should acquire the solution.

Following the Preliminary Investigation Report (Stage 1 assignment), the next step is to identify the requirements for a system, documenting them in the Requirements Specification document. The purpose of the Requirements Specification is to clearly define what the proposed system will do in non-technical user-oriented language. It should identify what data is entered into the system, what output is required, what processes the system should perform, what protections and controls are needed, what performance is expected, and what the business continuity needs are. In order to clearly express the requirements, data and process models are used to communicate how the system should work.

All of the information you need to complete the projects in this class is not provided in the case study. In the discussion area of the classroom, there is a discussion titled "Case Study Interview Questions" where you can pose questions about the case study, as if you were interviewing the people in the case study organization. Any information that you need that is not included in the case study should be asked about in this discussion. Responses from the faculty member on behalf of the case study organization will be available for everyone in the class.

Use the information provided in the case study and the Case Study Interview Questions discussion to create a checklist of functional and technical requirements and the data and process models listed below. Using the format and resources below, **list three requirements for each** of the areas shown in I and II. Then, create two diagrams to illustrate the scope of the system: the **context diagram** and the **use case diagram**. Then, create the **data flow diagram** to illustrate the flow of the inputs and outputs listed as functional requirements in section I. You should then select a **process or process step** (from those listed in section I.b – processing requirements) **that has some decision associated with it to create the three process models** listed below. The same process/process step will be used for all three of the process models; they are just different ways to represent the process and the decision involved. Approximate lengths for each section are provided as a guideline; be sure to provide all pertinent information. References in brackets are to the two e-textbooks (by authors Jawahar and Conger) used in this class and the page on which the explanatory information begins. **Use the examples listed** in the brackets to develop your diagrams. [Note: Every diagram/model needs to be customized for the course scenario. Simply copying the example diagram(s) with little or no customization will result in a zero for that diagram.] There are several different methodologies using different symbols, but your diagrams will be graded for compliance with the examples listed. You are required to use the symbols and diagramming methods illustrated in the examples, and follow any rules for the diagram in the sources listed with each diagram.

**Requirements Specification**

Background: First, provide a brief description of your proposed system to establish the context for the Requirements Specification.

I. Functional Requirements. The input-processing-output requirements must relate to each other. Start with three outputs you expect from the system, then determine what inputs are needed to create each of those outputs, and finally specify what processing needs to occur for each input to create the output. At least one of your processing requirements must have a decision associated with it so it can be used for the Process Models below. You should have a complete statement for each requirement, and each requirement should be numbered within the category. (introductory paragraph and list of 9 inter-related requirement statements) [Jawahar, p. 95 and the Week 3 Content, including reading on IEEE Software Requirements Specifications] [another source of ideas and concepts is:[**http://www.slideshare.net/ALATechSource/sample-project-requirements-document-library-blog**](http://www.slideshare.net/ALATechSource/sample-project-requirements-document-library-blog)]

a. Output requirements. List three different reports, results of a calculation, or other outputs.

i. Output #1

ii. Output #2

iii. Output #3

b. Input requirements.

i. List the main data elements required to create output #1

ii. List the main data elements required to create output #2

iii. List the main data elements required to create output #3

c. Processing requirements (at least one must have a decision associated with it)

i. Processing required to create Output #1

ii. Processing required to create Output #2

iii. Processing required to create Output #3

II. Technical Requirements (introductory paragraph and 3 requirement statements listed for each area below) [Jawahar, p. 95]

a. Security requirements

b. System control requirements

c. Performance requirements

d. Business continuity requirements (backup, restart, recovery)

III. System Scope Diagrams (introductory/explanatory paragraph and 2 diagrams) [a good explanation and example is at <http://www.jamasoftware.com/blog/defining-project-scope-context-use-case-diagrams/>]

1. Context Diagram [explanation in Conger, p.228; use example in Conger, p.229. Figure 7.2]
2. Use Case Diagram [use example in weblink above]

IV. Data Flow Diagram (introductory/explanatory paragraph and diagram) [Week 4 Content module and weblinks]

1. Data Flow Diagram [explanation in Conger, p.228; use example in Conger, p.230, Figure 7.3; use the tips located in the assignment folder (DFD\_Tips.pdf)]

V. Process Models (introductory/explanatory paragraph and 3 items below) [Week 4 Systems Analysis Course Module]

a. Structured English [use example in Systems Analysis Course Module, Process Description Tools]

b. Decision Table [use example in Systems Analysis Course Module, Process Description Tools]

c. Decision Tree [use example in Systems Analysis Course Module, Process Description Tools]

**Submitting Your Assignment**

Submit your document via your Assignment Folder as Microsoft Word document, or a document that can be ready using MS Word, with your last name included in the filename. Use the Grading Rubric below to be sure you have covered all aspects of the assignment.

**GRADING RUBRIC:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Criteria** | **90-100%**  **Far Above Standards** | **80-89%**  **Above Standards** | **70-79%**  **Meets Standards** | **60-69%**  **Below Standards** | **< 60%**  **Well Below Standards** | **Possible Points** |
| Functional Requirements | **16-18 Points**  Three requirements for input, output and processing are clearly stated and correctly inter-related; are logically derived from the Case Study, and demonstrate a sophisticated level of writing. | **14-15 Points**  Three requirements for input, output and processing are clearly stated and correctly inter-related; are logically derived from the Case Study, and demonstrate a clear understanding of the course concepts. | **12-13 Points**  Three requirements for input, output and processing are stated and are inter-related; and are derived from the Case Study. | **10-11 Points**  May present fewer than three requirements for input, output and processing, or they may not be inter-related; and/or may not be derived from the Case Study. | **0-9 Points**  Functional requirements are not included, or demonstrate little effort. | 18 |
| Technical Requirements | **11-12 Points**  Three requirements each for security, system control, performance, and business continuity are clearly stated and are logically derived from the Case Study, and demonstrate a sophisticated level of writing. | **9-10 Points**  Three requirements each for security, system control, performance, and business continuity are clearly stated and are logically derived from the Case Study, and demonstrate effective writing. | **8 Points**  Three requirements each for security, system control, performance, and business continuity are provided and are appropriate to the Case Study. | **7 Points**  Fewer than three requirements each for security, control, performance and business continuity may be provided, and/or they may not be appropriate to the Case Study. | **0-6 Points**  Functional requirements are not provided, or little effort is demonstrated. | 12 |
| System Scope Diagrams | **9-10 Points**  Context diagram and Use Case diagram are correctly constructed, logical, appropriate to the Case Study and demonstrate a sophisticated level of analysis. | **8 Points**  Context diagram and Use Case diagram are correctly constructed, logical, appropriate to the Case Study and demonstrate accurate analysis. | **7 Points**  Context diagram and Use Case diagram are provided, and are appropriate to the Case Study. | **6 Points**  Both Context and Use Case diagrams may not be provided, and/or may not be appropriate to the Case Study. | **0-5 Points**  Both Context and Use Case diagrams are not provided, or little effort is demonstrated. | 10 |
| Data Flow Diagram | **9-10 Points**  Data Flow Diagram is correctly constructed, logical, appropriate to the Case Study and demonstrate a sophisticated level of analysis. | **8 Points**  Data Flow Diagram is correctly constructed, logical, appropriate to the Case Study and demonstrate accurate analysis. | **7 Points**  Data Flow Diagram is provided, and are appropriate to the Case Study. | **6 Points**  Data Flow Diagram may not be correctly contructed, and/or may not be appropriate to the Case Study. | **0-5 Points**  Data Flow Diagram is not provided, or little effort is demonstrated. | 10 |
| Process Models | **36-40 Points**  **All three process models – structured English, decision table, and decision tree – are** correctly constructed, logical, appropriate to the Case Study and demonstrate a sophisticated level of analysis. All three models describe the same decision process. | **32-35 Points**  **All three process models – structured English, decision table, and decision tree – are** correctly constructed, logical, appropriate to the Case Study and demonstrate accurate analysis. All three models describe the same decision process. | **28-31 Points**  **All three process models – structured English, decision table, and decision tree – are** provided, and are appropriate to the Case Study. All three models describe the same decision process. | **24-27 Points**  All three process models may not be provided, may not describe the same decision process, and/or may not be appropriate to the Case Study. | **0-23 Points**  **The three process models are not** provided, or little effort is demonstrated. | 40 |
| Format | **9-10 Points**  Submission reflects effective organization and sophisticated writing; follows instructions provided; uses correct structure, grammar, and spelling; presented in a professional format; any references used are appropriately incorporated and cited using APA style. | **8 Points**  Submission reflects effective organization and clear writing; follows instructions provided; uses correct structure, grammar, and spelling; presented in a professional format; any references used are appropriately incorporated and cited using APA style. | **7 Points**  Submission is adequate, is somewhat organized, follows instructions provided; contains minimal grammar and/or spelling errors; and follows APA style for any references and citations. | **6 Points**  Submission is not well organized, and/or does not follow instructions provided; and/or contains grammar and/or spelling errors; and/or does not follow APA style for any references and citations. May demonstrate inadequate level of writing. | **0-5 Points**  Document is extremely poorly written and does not convey the information. | 10 |
|  |  |  |  |  | TOTAL Points Possible | 100 |