Systems Design

Project Guidelines

1.0) OVERVIEW

Working in teams of two, complete a systems design of the Denn’s Catering Ordering System based on the Case Scenario, System Output (invoice), the existing website (pennsrestaurant.com/catering), and the group question board (that has yet to be created by a class member).

2.0) TECHNICAL BACKGROUND

The Design Thinking Process seeks to Understand, Explore, and Materialize. We adopted this framework during our the Analysis of this system, but substituted the human context of Design Thinking with the system analytical methods of process and data modelling. With the conclusion of the Analysis phase in our System Development Methodology, we now shift to the Design phase. The Design Thinking process is aptly suited as a guide for this phase.

In the previous phase, Analysis, the questions of What is the problem? and Why is it important? were addressed, leading up to the ideation step of How do we solve it? The Analysis Phase of the SDLC and the Empathize, Define, and Ideate steps of the Design Thinking Process help to narrow the focus, or the scope of our solution. The next step in the Design Thinking Process is to Prototype, or, address the question of How do we create it? Traditional Systems Development Methodology approaches (e.g., the SDLC) stipulate designing databases, forms and reports, dialogues and interfaces, and general system architectures such as distributed and internet-systems.

2.1) The Agile System Development Methodology is a alternative to the SDLC that is both newer and arguably more congruent with current information technologies (i.e., service-oriented architectures). The Manifesto for Agile Software Development (http://agilemanifesto.org) outlines values of this approaches along with 12 guiding principles. Valacich and George (2017) discuss both Agile (p. 17) and an offshoot, Agile Usage-Centered Design (p. 171). Notice the shift from documentation and process to “...user roles, user goals, and the tasks necessary to achieve those goals” (p. 171), and the reliance on paper-and-pencil prototypes.

2.2) Test-Driven Development is an approach that works in conjunction with the Agile Methodology. This approach stipulates that a test is first written that fails and then the system is developed until that test is passed. This approach is useful for targeted design versus defining seemingly endless system requirements.

2.3) The System Development Environment is inclusive of many approaches and the adoption of a newer approach does not preclude the consideration of traditional approaches. In other words, concepts of the SDLC, the Design Phase, and specific design tools such as wireframes should not be discounted.

Note: This is a strong hint that specific terms and concepts from your textbook should be included in the introductions to each section of your submission.

3.0) PROJECT REQUIREMENTS

Prepare a document (or documents) that report a System Design for Denn’s Catering Ordering System based on the following scope:

Focus on low-revenue, high-maintenance customer interactions: new, individual, customers.

Focus on standard, repetitive process; those lend themselves best to being codified into a IT-based system.

Design a mobile-friendly web-based system.

Incorporate features of notification/confirmation, and self-service

Your document should include the following:

A clear and descriptive title. Do not use a title such as Project Analysis, or Assignment One. Your title can be long & use a subtitle for a meaningful description.

All pertinent identifying information: name, class details, date.

Clearly numbered and labeled sections of the paper.

Introductions to each section (do not just start with your list) that include reference and explanation to any pertinent technical concepts.

Boldface any and all technical terms.

Include page numbers

3.1) Introduction

Write an introduction that clearly states your design approach and defines all technical terminology. Include a recap of the Analysis phase and overview of the Design phase. Finish the introduction with a problem statement in the context of the case: Consider beginning, “The purpose of this systems design is…” and then describing what you are creating.

3.2) User Stories, System Tests

Following the templates for Agile user stories and test-driven development tests write both user stories and system tests for the newly designed Denn’s system. Any test written should be replete with step-by-step instructions.The stories and tests should reflect the narrow-focus of the project scope in Section 3.0.

3.3) System Prototyping

Using techniques of Agile, devise the documentation for a System Prototype that clearly communicates the functionality of your designed system.

3.4) Strategy for Managing the System

Upon completing your Design prototype, switch from your role as a systems designer to a managerial perspective. Consider how the new system will be managed. Now that it is web-based, what data are available for reporting and analyzing? What are the critical success factors, key performance indicators, routine reports, and metrics that a manager will need? How will the system support these needs? Lastly, consider higher-order levels of system (such as big data, predictive analytics, and artificial intelligence) and how these may be applied to the context of the case.

References

Valacich, J. S., & George, J. F. (2017). Modern systems analysis and design (8th ed.). Upper Saddle River, NJ: Pearson Education, Inc., publishing as Prentice Hall.