DESIGN

Computer Science 423
Spring Semester, 2020

Your design for the software project to be developed over the two semester sequence, an application for an institutional or industrial client, is due for review on the date provided in your project plan and agreed upon with the instructor. You will receive an evaluation of your document for incorporation into your final grade, but you will have the opportunity to revise the document for the project due at the end of the semester.

Based on your requirements specification describing what the application is expected to accomplish, your document should present a complete object-oriented design ready for implementation. To provide traceability to the requirements for the application, you should use the same terminology in your design as much as possible. Your document should be organized in a readable format, describing in detail how the application will satisfy the requirements given in the specification. Although you are not required to follow the annotated outline shown below for the organization of your document, you should include all items specified in the outline.

Title Page

The document title, course, team name, team members, and date should be given.

Table of Contents

Serving as an outline of the contents of the design document, the principal sections should be indicated with their page numbers in the document.

List of Figures

All figures should be listed with the page numbers on which they appear.

Revision History

The initial release of the design document and any subsequent revisions of the document, including dates and brief descriptions, should be provided in reverse chronological order.

1.0 Introduction

The purpose and intended audience of the document should be given, referencing the requirements specification for the application. The layout of the remainder of the design document should be discussed.

2.0 Architecture

A complete class diagram in UML notation should be provided to show the architecture of the application using object-oriented design. The type of each attribute should be indicated on the diagram. For each method, any return type and parameters with their types should be included. If more than one page is used for representation of the class diagram, classes in various levels of detail may appear on multiple pages, but associations between classes should appear on only a single page. Off page connectors may be used next to classes on the diagram for cross reference.

3.0 Data Dictionary

Each class shown on the class diagram for the application should be described in detail, including the purpose of the class and the lifetime of objects of the class during operation. Associations with other classes, attributes of the class, and the operation of methods of the class should be described as well. Pseudocode should be used in describing any operation that is sufficiently complex.

3.1 $Class_1$
- **3.1.1 Description**
- **3.1.2 Associations**
- **3.1.3 Attributes**
- **3.1.4 Methods**

3.2 $Class_2$

:

3.n $Class_n$

4.0 User Interface

To show the appearance of the user interface for the application, examples of the input and output displayed on screens should be provided for invocation of the application and performance of each of its actions. Multiple examples should be included for an action as needed to accurately portray the user interface.

5.0 Information Repositories

Examples of the information repositories used by the application should be shown.

References

The requirements specification and any textbooks or other documents referenced in the design document should be listed.

Appendix

Any additional material supporting the design should be provided.