CIS 4980

Final Project Documentation Guidelines

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Final Project Documentation

The contents of the final project documentation should represent the best work each team has done in this semester. Thus, the documentation should demonstrate the systematical approach taken by each team to complete the project successfully, which should show the correct understanding of the user requirements, the thorough analysis of the requirements, the thoughtful design of the IT solution(s) to satisfy the user requirements, the sound implementation of the solution(s), comprehensive testing and verification of the implementation, a well-managed and executed project plan, mostly important, the excellent communications with the client throughout the whole process.

The final documentation should clearly demonstrate the critical thinking. For example, simply present a solution of your choice is not adequate. You must discuss other possible, alternative solutions, show the evaluation of those solutions based on a set of well-defined criteria, and finally conclude that the solution of your choice is the most optimal one to meet the user requirements. Such critical thinking is essential in the business world when making decisions that could result in millions of dollars saved or wasted. Thus, you should employ critical thinking in each decision you make throughout of the project and start to compile the final documentation as the project progresses through the semester.

Acting as professional IT consultants, it is your team's responsibility to determine the contents of the final set of documents delivered to the client. In the real business situations, clients in general do not always know what final documentation they need or specify what they want to get at the completion of the project. Your team should carefully discuss and decide the appropriate and sufficient documents you should deliver to the client based on the nature of the project and your IT expertise. After all, the set of final documents should be an excellent showcase of the great work completed by your team.

This guideline specifies the minimal set of documents a typical project should deliver based on the best practice. The grading of the final reporting is based on the guideline, or a grade of B. However, your team can go beyond the minimal set of documents to distinguish your team by showing the high-quality work and outstanding accomplishments, which translates into a grade of A or better.

The project final documentation may be a single document, but it often consists of multiple, separate documents as decided by your team. Each document must be in professional style and consistent with other documents provided by your team in their style, layout, etc.

Most importantly, you need to check spelling and grammar errors in all documents, thoroughly. Spelling or grammar errors would result in final grade deduction.

Report Organization

Each report should contain the following contents:

- *Report Cover*
  It should include:
  - Client name - The most prominent item on the cover will be the client name
    Student teams may adopt fictitious team names; however, the terms "Inc." or "Corporation" must not be used unless the team is a legally incorporated entity
  - Name of the application
  - Names of student team members
  - Date the report is submitted
  - Team member contributions in the following format:

Member Name	Contribution	Member Signature
<member name>	<0% - 100%>	*<member signature>*
…	…	…
…	…	…

    - The contribution table above is not required for a single member team
    - Each member must sign-off it to acknowledge the agreement

- *Title Page*
  It should include
  - Client name
  - Physical postal address and phone number
  - Name of the application
  - Names, direct phone numbers and email addresses of all sponsoring client contacts
  - Names and contact information for all team members.

- *Table of Contents*

- *Contents*
  (To be discussed in following sections)

- *Diagrams*
  For software development projects, include diagrams as learned in System Analysis and other CIS classes, with EACH diagram appropriately labeled and the rationale explained. What is the diagram, what does it tell the reader, and why is it there?

- *Appendixes*
  Include other documents for your project

- *Footnotes*
  Include footnotes only for any material copied or paraphrased from other sources.

- *Bibliography*
  There must be evidence of research into the client industry, company, the application studied, and the CIS topics pertinent to the project. References for all material used include:
    - Printed or electronic published material
    - Lecture notes from previous courses
    - Client company documentation
    - Personal interviews, etc. Interviews must be documented as to persons interviewed, place, date, and topics covered

All reports should follow the MLA Formatting and Style Guide. In addition, the following references are posted in the *Project Guidelines* folder to help write quality reports:

- Sample MLA paper
- Professional and Technical Writing Processes: Composing
- Using Academic Language
- Using First Person in an Academic Essay: When is It Okay

IT System Development Projects

System development projects involve application development using package software or coded in selected programming languages such as implement a specific system/application, research and test a new technology by creating a system prototype, etc. The users of the systems usually consist of business users (end users) and technical users. The end users use the systems to complete business tasks functions. The technical users deploy the systems and maintain the systems. The final reporting should contain the following contents:

- User Requirement Specification and Analysis
    - Refer to CIS 3300 for user requirement specification, use case modeling, system process modeling, and other system analysis techniques
- System Analysis and Design
    - Refer to system design techniques covered in CIS 3300, CIS 3730, CIS 3270, and other CIS courses for data modeling, system architecture, user interface design, etc.
- System Implementation and Testing
    - Refer to CIS 3260, CIS 3730, CIS 3270 and other CIS courses for the appropriate techniques for system implementation and testing. It must demonstrate through the system prototype that the designed system satisfies the user requirements
- System prototype code
    - Include databases, programming code, etc.
- System Technical Manual
    - Provide detailed instructions on the system installing, setup, configuration, testing, etc. so that a technical person can follow the manual to get the system set up and ready to run in a given environment.
- User Guide and Manual
    - Provided detailed descriptions of the system functions for business users (non-technical users) and comprehensive instructions on the use of those functions by the users.

User Requirements Specification and Analysis

It contains all user requirements collected from the client and your analysis of the requirements. The main objective is to show your understanding of user requirements and the value added to the business. It answers the question what the system is going to do. CIS 3030 System Analysis and other CIS courses should provide you the framework of the work.

Depending on the nature of the project, it should include:

- Business problems to be solved
- Business values to be created
- The scope of the system, i.e., the final deliverables
- Detailed description of system functions
- Business and technology constraint of the organization such as budget, technology platform standard (i.e., Java, C#, Oracle, etc.), and system integration, i.e., deployed as standard-alone system or part of the enterprise system of the organization, etc.

System Analysis and Design

It transforms the user requirements to the design of the system, i.e., the solution to the given problems. It shows how you designed the system. The main objective is to show the application of design methods and approaches learned in the CIS classes including System Analysis, Database Management Systems, and other courses. It should include:

- Analysis of the system (i.e., use cases, process flows, data modeling, etc.)
- System design (i.e., system architecture, functional modules, etc.)
- Database design (i.e., logical data models, table structures, etc.)

System Implementation and Testing

It describes the technology chosen to implement the system, the implementation of the design, and the testing performed. It should show how you implemented the system using the selected technologies and the delivered system satisfied the user requirements. It should include

- What technologies selected to implement which part of the system
- Technical details of the system
- Test cases and test data used to test the system and the testing results
- Assessment of whether the system prototype meets the user requirement
- Future work and improvement

System Technical Manual

It provides detailed instructions to deploy and maintain the system. The main objective is to provide sufficient technical instructions for the technical staff of the client to deploy and maintain the system without your team. Thus, it should include:

- System requirements, i.e., required operating system (i.e., Windows, UNIX, iOS, etc.), middleware (i.e., application server, Web server, etc.), technology platform (i.e., Java, C#, etc.)
- Deployment instructions, i.e., step-by-step instructions to deploy the system in the client's computers (i.e., servers, cloud, etc.)
- Deployment testing instructions, i.e., instructions to test the successful deployment of the system

User Guide and Manual

It describes how to use the system. The main purpose is to help the end users to how to perform those business functions using the system without you. Hence, it should include:

- An introduction of the functions
- Functional flows of the system
- Detailed instructions of each function

You should be generous in using diagrams and screen captures to help the end users learn all functions and how to accomplish various business tasks.

Non-System Development Projects

Those projects develop an IT solution for a given business problem. The solution does not create a system prototype as its final deliverable. Instead, such a project delivers research work such as research on and evaluation of new technologies, improving and innovating business processes, defining and creating policies on IT governance, information system development, and IT system/networking securities, developing business continuation plans, user training on cybersecurity, etc. The reporting contents of those projects can vary widely depending upon the nature of the projects. Thus, the guidelines below address the common characteristics shared by all of them and the essential components contained in those documents. Your team needs to develop the documents appropriate for your project.

In addition to CIS courses, your team should also draw the knowledge from other business courses.

Technology Research / Business Process Innovation

A research report should include:

- User requirement specification and analysis, i.e., what are the business problems and needs
- Research methodologies and approaches considered and their sources
- Selected research methodology and approach and explanation of the selection process and decision
- Research conducted and findings
- Analysis of the findings
- Research recommendation and explanation
- Future work and recommendations.

The main objective is to show that your team has followed a well-accepted research method and approach to produce a sound research result and recommendation. You need to utilize good resources, data, other research results in the report to meet the user requirements.

Policy Development

A policy documentation should include:

- User requirement specification and analysis, i.e., what are the business problems and needs
- Methodology and approach followed and explanation of the decision
- The process to obtain required information including user interviews, field visit and study, etc.
- Policies and procedures
- The scope within which the policies and procedures can be applied
- Testing of the policies and procedures help assess their correctness and effectiveness through a field trial, a pilot testing, a demonstration to the stakeholders and get their feedback, a survey of users / stakeholders, etc.
- Future work and recommendations.

The main objective is show that your team has followed a well-established approach to define and create correct and effective policies and procedures meet the user requirements.

User Training & Procedures

A training documentation should include:

- User requirement specification and analysis, i.e., what are the business problems and needs
- Methodology and approach adapted for the user training and explanation of the decisions
- The process to obtain required information including user interviews, field visit and study, etc.
- Developing training documents and procedures
- The scope within which the training and procedures can be applied
- Testing the training documents and procedures to assess their correctness and effectiveness before rolling out to all users through focus-groups, a field trial, a pilot testing, presentations to the stakeholders to get their feedback, a survey of users / stakeholders, etc.
- Revised training documents and procedures
- Future work and recommendations.

The main objective is show that your team has followed a well-established approach to define, create, and execute the training successfully to accomplish the project goals and objectives.