Southern New Hampshire University

IT 204 Final Project Guidelines and Rubric

Database Proposal and Implementation Plan Report

Overview

The final project for this course is the creation of a database proposal and implementation plan report that will address the needs of a case scenario involving Birchwood Lane Schools. The purpose of this project is to assess your understanding of data models, simple database structures and functions, and terminology from an information management perspective.

You are to design a simple database framework that addresses the needs of Birchwood Lane Schools, and to develop a strategy for implementing that database. Your deliverables for this project will include the **relational database** you have designed, including the conceptual and logical **diagrams** (e.g., Microsoft Visio), a narrative addressing the database selection and justification, as well as a **plan for implementation**.

The project is supported by **four milestones**, which will be submitted at various points throughout the course to scaffold learning and ensure quality of the final submission. These milestones will be submitted in **Modules Two, Three, Four, and Five. The final submission of your database proposal and implementation plan report will occur in Module Seven.**

It is important to note that at the end of your degree program experience, you will develop a portfolio that will provide a clear representation of your mastery of program outcomes, skills, and abilities. The artifact that is suggested for use from this course is the case needs analysis section of your proposal and plan. It is strongly recommended that you save this document in a place where it can be accessed again at a later date.

Outcomes

This assessment will evaluate your mastery with respect to the following **course outcomes**:

- Apply the appropriate terminology of the realm of data and information management to real-world scenarios
- Develop and address complete and valid data requirements for business cases
- Design and plan to implement a simple relational data model using standard database management methods
- Differentiate between the uses, benefits, and limitations of commonly used tools and technologies in data and information management

Southern New Hampshire University

Prompt

You will be developing your project and its critical elements based on the following scenario:

> Birchwood Lane Schools currently records all student, instructor, and course data on paper. To meet state and federal requirements, Birchwood Lane Schools must implement an application system that records all student, instructor, and course data electronically.

You will design a relational database and develop a strategy for implementation, which you will fully document in a comprehensive written report.

Current data requirements include the following:

1. Student data (full name, full address, phone, email, birthdate, enrollment date, graduation date, courses taken, courses currently enrolled)
2. Instructor data (full name, full address, phone, email, birthdate, hire date, courses taught, courses currently assigned)
3. Course data (course name, course start date, course end date, course category, instructor, students)

Each student and instructor may have multiple addresses and may be enrolled in multiple courses during a term. Each instructor may teach multiple courses during a term.

Specifically, the following **critical elements** must be addressed in your submission:

I. **Introduction:** Based on the given scenario you were provided:
   A. Summarize the data and information **requirements** of the business case and client needs using appropriate data and information management terminology.
   B. Briefly explain the **purpose** of the database management system (DBMS) used and the importance of a database in meeting the requirements.

II. **Business Case and Gap Analysis:** Analyze the client needs and how the project will address them. This type of analysis identifies the difference between a current condition and future state (i.e., gap analysis). Based on the scenario showing the current system the school has in place to collect data:
   A. What **information** should be included in the new database solution to address the current state? Why?
   B. What **additional information** is needed to complete the business case data requirements and achieve the desired future state?

III. **Relational Database Model:** Based on the scenario and the information from your introduction and your analysis:
   A. Design a **basic** relational database visual **diagram** with entities, attributes, and relationships based on the requirements you have identified. Be sure to include proper relationship mapping.
   B. Create a **conceptual** data model visual diagram and a **logical** data model visual **diagram** based on the entities present in your visual conceptual database.

IV. **Database Selection:** Select an appropriate DBMS (Note: Refer to Milestone Four to help you with this area) to recommend for Birchwood Lane Schools (**Oracle, IBM DB2, MS SQL Server, or an open-source database)** and explain:
   A. Why did you **choose** this DBMS? Be sure to lists all uses, benefits, and limitations for each of the following: data size limits, purchase cost, administration, operating system/hardware requirements, features, and performance/scalability.

B. Explain what **additional or alternative technologies** might assist Birchwood Lane Schools in managing its data.
C. Comparatively evaluate these technologies in terms of their **applicability** to the needs of Birchwood Lane Schools.

V. **Implementation of Relational Database Model:** In outline format, recommend a step-by-step process for implementing the new database.
   A. Include relevant **information and steps** necessary for implementing the new database model.
   B. What **additional pieces** of information are necessary to develop a full plan for implementation or may impact implementation success? For example, these could include DBMS management requirements, man hours, or data input.

VI. **Closing Statement:** Articulate the importance of an electronic DBMS versus Birchwood's traditional paper method using appropriate terminology for the discipline.

Milestones

Refer to the Guidelines and Rubrics folder to review the rubrics for each project component

Milestone	Deliverables	Module Due	Grading
One	Group Discussion: Defining the Audience	Two	Graded separately; Discussion Rubric
Two	Group Discussion: Business Case for the DBMS	Three	Graded separately; Discussion Rubric
Three	Proposal Draft	Four	Graded separately; Milestone Three Rubric
Four	Database Management System Specifications	Five	Graded separately; Milestone Four Rubric
	Final Submission: Database Proposal and Implementation Plan Report	Seven	Graded separately; Final Project Rubric (in this document)

Southern New Hampshire University

Final Project Rubric

Guidelines for Submission: Written components of the project must follow these formatting guidelines when applicable: double spacing, 12-point Times New Roman font, one-inch margins, and APA citations. The written proposal report must be between 5 and 10 pages, **not including** cover page, diagrams, or resources.

Critical Elements	Exemplary (100%)	Proficient (85%)	Needs Improvement (55%)	Not Evident (0%)	Value
Introduction: Requirements	Meets "Proficient" criteria and demonstrates keen insight into how the DBMS or data model will benefit Birchwood Lane Schools	Summarizes the data and the information requirements of the business case and client needs using appropriate data and information management terminology	Summarizes the data and the information requirements that are needed, but the summary lacks critical details related to the requirements or does not use appropriate data and information management terminology or contains inaccuracies	Does not summarize the data and the information requirements that are needed	7.92
Introduction: Purpose	Meets "Proficient" criteria, and demonstrates keen insight into how the DBMS or data model will benefit Birchwood Lane Schools	Briefly explains the purpose of the DBMS used and the importance of a database in meeting the requirements	Briefly explains the purpose of the DBMS used and the importance of a database in meeting requirements, but explanation contains inaccuracies or is illogical	Does not explain the purpose of the DBMS used and the importance of a database	11.88
Business Case and Gap Analysis: Information	Meets "Proficient" criteria, and explanation demonstrates keen insight on the information needed for the proposed database solution	Identifies what information should be included in the new database solution to address the current state and explains reasoning	Identifies what information should be included to address the current state, but reasoning contains inaccuracies or is illogical	Does not identify what information should be included to address the current state in the new database solution	7.92
Business Case and Gap Analysis: Additional Information	Meets "Proficient" criteria, and the description demonstrates keen insight into how the information from the scenario should be used	Describes additional information needed to complete the business case data requirements and achieve the desired future state	Describes additional information needed to complete the business case data requirements but lacks key details or contains inaccuracies in achieving the desired future state	Does not describe additional information needed to complete the business case data requirements	7.92
Relational Database Model: Basic Diagram	Meets "Proficient" criteria, and the relational database visual diagram is simply and intuitively organized	Basic relational database visual diagram clearly illustrates all applicable entities, attributes, and relationships based on the scenario	Basic relational database visual diagram clearly illustrates all applicable entities, attributes, and relationships based on the scenario but lacks key details or	Basic relational database visual diagram does not illustrate applicable entities, attributes, and relationships	5.94

			contains inaccuracies		
Relational Database Model: Conceptual and Logical Diagrams	Meets "Proficient" criteria, and the conceptual and logical visual diagrams are simply and intuitively organized	Conceptual and logical visual diagrams clearly illustrate all applicable entities and attributes based on the scenario	Conceptual and logical visual diagrams illustrate applicable entities and attributes based on the scenario but lack key details or contain inaccuracies	Conceptual and logical visual diagrams do not illustrate applicable entities and attributes	5.94
Database Selection: Choose	Meets "Proficient" criteria, and the database selection reasoning evidences keen insight into the world of information technology	Database selection is supported with a comprehensive explanation of the uses, benefits, and limitations	Database selection is supported with a comprehensive explanation of the uses, benefits, and limitations, but explanation lacks key details or contains inaccuracies	Database selection is not supported	7.92
Database Selection: Additional or Alternative Technologies	Meets "Proficient" criteria, and the database selection explanation demonstrates keen insight into additional or alternative technologies	Explains additional or alternative technologies that might assist in managing data needs of Birchwood Lane Schools	Explains additional or alternative technologies that might assist in managing data needs of Birchwood Lane Schools, but explanation contains inaccuracies or is illogical	Does not explain additional or alternative technologies	7.92
Database Selection: Applicability	Meets "Proficient" criteria, and the database selection evaluation demonstrates keen insight on additional or alternative technologies	Comparatively evaluates additional or alternative technologies that might assist in managing data needs of Birchwood Lane Schools	Comparatively evaluates additional or alternative technologies that might assist in managing data needs of Birchwood Lane Schools, but comparison contains inaccuracies or is illogical	Does not comparative evaluate additional or alternative technologies	7.92
Implementation of Relational Database Model: Information and Steps	Meets "Proficient" criteria, and the information outline shows keen insight into the nuances of successful implementation	Includes all key relevant information and steps necessary for implementing the new database	Includes relevant information and steps necessary for implementing the new database but lacks key details or contains inaccuracies	Does not include all key relevant information and steps necessary for implementing the new database	5.94
Implementation of Relational Database Model: Additional Pieces	Meets "Proficient" criteria, and the implementation outline shows keen insight into the nuances of successful implementation	Describes additional pieces of information that are necessary to develop a full plan for implementation or that may impact implementation success	Describes additional pieces of information, but they may not be necessary to develop a full plan for implementation or impact implementation success or lacks key details or contains inaccuracies	Does not describe additional pieces of information necessary	5.94
Closing Statement	Meets "Proficient" criteria, and the use of industry-specific	Articulates the importance of an electronic DBMS versus	Articulates the importance of an electronic DBMS versus	Does not articulate the importance of an electronic	11.88

	language effectively establishes expertise in addressing the business case	Birchwood's traditional paper method using appropriate terminology for the discipline	Birchwood's traditional paper method using appropriate terminology for the discipline but lacks key details or contains inaccuracies	DBMS versus Birchwood's traditional paper method	
Articulation of Response	Submission is free of errors related to citations, grammar, spelling, syntax, and organization and is presented in a professional and easy-to-read format	Submission has no major errors related to citations, grammar, spelling, syntax, or organization	Submission has major errors related to citations, grammar, spelling, syntax, or organization that negatively impact readability and articulation of main ideas	Submission has critical errors related to citations, grammar, spelling, syntax, or organization that prevent understanding of ideas	4.96
				Total	**100%**