IT221 – ADVANCED DATABASE SYSTEMS
SEMESTRAL PROJECT REQUIREMENTS

IT221 - ADVANCED DATABASE SYSTEM PROJECT DOCUMENT GUIDELINES AND FORMAT

1. Title Page

- Project Title
- Authors/Proponents
- College Name
- Submission Date/Year

2. Introduction

2.1 Background of the Study

- *Discuss the importance of database systems in managing large volumes of data efficiently.*

2.2 Problem Statement

- *Describe the challenges or issues that the proposed system aims to address.*

2.3 Objectives

- *Develop an advanced database system that enhances data management efficiency.*
- *Implement security measures to ensure data integrity and confidentiality.*
- *Optimize query processing for faster data retrieval.*

2.4 Significance of the Study

- *Explain how the system will benefit the end-users, organization or industry.*

2.5 Scope and Limitations

- *Define the extent of the project, including its functionalities and constraints.*

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3. Documentation of the Existence and Seriousness of the Problem

- *It is a critical section in project development that establishes the necessity of the proposed system. It provides evidence that a problem exists, explains its impact on stakeholders, and justifies why an advanced database system is needed as a solution.*

3.1 Documentation of the Current System

- *Describes the existing process used for student credential requests (manual, semi-automated, or outdated digital system).*
- *Identifies inefficiencies such as delays, errors, data loss, security concerns, and lack of tracking mechanisms.*

3.2 Problems Identified in the Current System

- *Highlights and discuss the specific pain points in the current system*
- *This section outlines the specific issues and limitations of the existing student credential request and processing system. It serves as the foundation for justifying the need for a digital solution by identifying inefficiencies, bottlenecks, and challenges faced by stakeholders.*

3.3 Seriousness of the Problem

- *Refers to the extent of the negative impact caused by the inefficiencies in the current system. Highlights how the problem affects key stakeholders, disrupts operations, and creates challenges that require urgent resolution.*

3.4 Need for a Digital Solution

- *This section justifies why an automated system is essential to address the inefficiencies and challenges of the current manual or outdated credential request process. It highlights the limitations of the existing system and explains how a technology-driven solution can improve operations, ensuring efficiency, security, and accessibility.*

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4. Technical Requirements

- *Outlines the necessary hardware, software, network, and security specifications needed to develop, deploy, and maintain the system. It defines the system architecture, development tools, database technologies, security measures, and performance criteria to ensure the system operates efficiently and meets user needs.*

5. System Development Methodology

- *This section outlines the approach, strategies, and techniques that will be applied throughout the system development lifecycle. This ensures that the system is built efficiently, meets user requirements, and adheres to best practices in software engineering.*

6. Project Schedule (Gantt Chart)

- *The Project Schedule using a Gantt Chart is a visual representation of the timeline and progress of tasks throughout the development of the System. It helps in planning, tracking, and managing project activities efficiently.*

7. Database Implementation

- *The process of designing, developing, and deploying a database system to support an application or business process. It involves converting the logical database design (e.g., ERD and schema) into a fully functional physical database that efficiently stores, retrieves, and manages data.*
- *Identify the Entities and Attributes (Entity Name, Primary Keys, Attributes)*
- *Identify Cardinalities and explain its Relationships (Entity Involved, Cardinality, Relationship)*

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8. Entity-Relationship Diagram (ERD)

- *Illustrate the relationships between database entities.*

9. Database Schema Design

- *Define the structure of database tables, including primary and foreign keys.*

10. Database Tables and Structures

- *Describe each table and its constraints.*

11. Database Schema

- *The structured blueprint of a database that defines how data is organized, stored, and managed within a database system. It outlines the tables, fields, data types, relationships, constraints, indexes, and other elements that ensure data integrity and efficient retrieval.*

Document Format:

- ✓ **Margins:**
  - Left: 1
  - Right: 1
  - Top: 1
  - Bottom: 1
- ✓ **Font:** Arial, 12 pt. align justify
- ✓ **Paragraph Spacing:** Double-spaced (2.0)
- ✓ **Spacing between the end of a paragraph and the title:** Press "Enter" twice or 2 enter spaces

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