Databases II
Semester 2025-III
Final Project Definition and Delivery

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Congratulations on reaching the final stage of your *Databases II* course project! This document outlines the requirements for your final project delivery. Your submission should demonstrate a comprehensive, integrated, and well-documented solution. It must address all business, technical, and data requirements defined throughout the course.

Final Project Scope and Objectives:

- **Business Model:** Present a refined Business Model Canvas, clearly describing your application's value proposition, customer segments, channels, revenue streams, and other key aspects. (`https://corporatefinanceinstitute.com/resources/management/business-model-canvas-examples/`)
- **User Stories:** Provide a complete set of user stories, covering all relevant roles and scenarios, each with acceptance criteria.
- **Requirements:** Clearly state all functional and non-functional requirements, ensuring alignment with the project's goals and real-world needs.
- **System Architecture:** Deliver a detailed architecture diagram and description, including data flow, main components, and technology choices (relational, NoSQL, distributed, etc.).
- **Database Design:** Include the final version of your ER diagram, relational schema, and (if applicable) NoSQL data models. Explain key design decisions.

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Any comment or concern regarding this project can be sent to Carlos A. Sierra at: *cavirguezs@udistrital.edu.co*.

- **Query and Analytics Design:** Present a set of representative queries (SQL and/or NoSQL) that demonstrate how your system retrieves, analyzes, and delivers information for business intelligence and recommendations.
- **Concurrency, Parallelism, and Distribution:** Summarize your strategies for concurrency control, parallel and distributed processing, and how these contribute to performance, scalability, and availability.
- **Business Intelligence Module:** Describe how your system supports managerial insights and decision-making (e.g., dashboards, reports, analytics pipelines).
- **Evaluation and Reflection:** Critically evaluate your solution, discussing strengths, limitations, and possible future improvements.
- **Project Implementation:** Deliver a working implementation of your project using appropriate technology tools (e.g., database engines, programming languages, frameworks). The implementation must demonstrate the main functionalities described in your documentation.

Methodology and Deliverables:

1. **Documentation:**
   - Compile all sections (business model, user stories, requirements, architecture, database design, queries, concurrency/distribution strategies, BI module, evaluation) into a single, well-organized PDF.
   - Include diagrams, tables, and references as needed.
2. **Project Repository:**
   - Organize all source files, scripts, diagrams, and documentation in a folder named `Final-Project` in your course repository.
   - Provide a `README.md` that explains the structure and how to navigate your project.
3. **Project Implementation:**
   - Deliver a functional implementation of your project using the selected technology stack (relational and/or NoSQL databases, backend/frontend frameworks, etc.).
   - Ensure the implementation covers the main features, queries, and business intelligence requirements described in your documentation.
   - Include clear instructions for setup and execution in your `README.md`.
4. **Demonstration (Mandatory):**
   - Prepare and deliver a brief presentation or video (5-10 minutes) demonstrating your system's main features, queries, and BI outputs.
   - The demo is a required part of the final evaluation.

Project Requirements Checklist:

- Fast query execution in a big data context.
- Constant ingestion of data throughout the day.
- Business intelligence module for managerial insights.
- Multi-location data storage and access.
- Recommendation system for products or services.
- High availability and scalability.

Examples of Application Baselines:

- E-commerce platform (e.g., Amazon)
- Financial services (e.g., Citibank)
- Telecommunications (e.g., Telefónica)
- Cloud storage (e.g., OneDrive)
- Social media (e.g., X/Twitter)
- Ride-hailing (e.g., Uber)

Deadline: Mondayt, December 8th, 2025, 20:00. Late submissions may affect your grading according to course policies.

Notes:

- All documents must be in **English**.
- Cite any references (articles, tutorials, frameworks) that influenced your design choices.
- Focus on clarity, completeness, and professional presentation.
- This is your opportunity to showcase your ability to design, implement, and document a robust, scalable, and insightful data system.

Good luck! Your final project is the culmination of your learning and effort throughout the course. Make it count!