Databases II

Semester 2025-III
Workshop No. 2 — Data System Architecture and Information Retrieval

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Welcome to the second workshop of the *Databases II* course! This session is the next step in your course project and focuses on designing the initial version of your data system architecture, defining the information to be retrieved, and proposing sample queries for both relational and non-relational database tools.

Workshop Scope and Objectives:

- **Data System Architecture:** Propose an initial version of your system's architecture, including main components, data flow, and technologies (relational and/or NoSQL).

- **Information Requirements:** Clearly define what information your system must be able to retrieve to support business needs and user stories.

- **Query Design:** Propose and describe at least three initial queries for each technology you plan to use, demonstrating how your system will retrieve key information.

- **Continuous Improvement:** Review feedback from Workshop 1 and refine your previous deliverables (business model, user stories, ER diagram, etc.) as needed.

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

Methodology and Deliverables:

1. **Improvements to Workshop 1:**

   - Review and refine your Business Model Canvas, user stories, and ER diagram based on feedback.
   - Clearly indicate what was improved or changed.

2. **Data System Architecture:**

   - Present a high-level architecture diagram showing main components (databases, ETL, BI modules, APIs, etc.).
   - Describe the role of each component and the data flow between them.
   - Specify which technologies (relational, NoSQL, cloud, etc.) you plan to use and justify your choices.

3. **Information Requirements:**

   - List and describe the main types of information your system must retrieve (e.g., sales reports, user activity, recommendations).
   - Link these requirements to your business model and user stories.

4. **Query Proposals:**

   - For each main information requirement, write at least one sample query in SQL (for relational) and/or the appropriate NoSQL query language.
   - Briefly explain the purpose of each query and what insight or data it provides.
   - If using both technologies, show how each is leveraged for different needs (e.g., analytics vs. real-time access).

5. **Delivery Format:**

   - Compile your architecture diagram, information requirements, queries, and improved Workshop 1 deliverables into a single PDF.
   - Organize your files in a folder named `Workshop-2` in your course project repository, with a `README.md` referencing each section.

Deadline: Saturday, October 18th, 2025, at 12:00. Late submissions may affect your grade according to course policies.

Notes:

- All documents must be in **English**.

- Cite any references (articles, tutorials) that influenced your design choices.

- Focus on clarity, completeness, and how your architecture supports the business and user needs.

- Treat this delivery as an incremental step. You will continue to expand and refine your architecture, queries, and documentation in subsequent workshops.

- Consider including a brief reflection (1-2 paragraphs) describing challenges faced and decisions made during this phase.

Good luck! This step will help you clarify your system's structure and ensure your project is on track for successful implementation.