Databases II
Semester 2025-III
Workshop No. 1 — Project Definition and Database Modeling

Eng. Carlos Andrés Sierra, M.Sc.
Full-time Adjunct Professor
Computer Engineering Program
School of Engineering
Universidad Distrital Francisco José de Caldas

Welcome to the first workshop of the *Databases II* course! This session is the initial step of your *course project* and focuses on defining the `business`, `user`, and `data` context for a real-world, data-intensive application.

Workshop Scope and Objectives:

- **Business Model:** Use the *Business Model Canvas* to describe the value proposition, customer segments, channels, revenue streams, and other key aspects of your application. See: `https://corporatefinanceinstitute.com/resources/management/business-model-canvas-examples/`
- **Requirements Gathering:** Specify both *functional* and *non-functional* requirements, ensuring your project addresses big data, fast queries, data ingestion, business intelligence, multi-location access, recommendations, high availability, and scalability.
- **User Stories:** Write user stories that capture the needs and interactions of different stakeholders with your system.
- **Database Architecture:** Propose an initial architecture for your database, including a first version of the Entity-Relationship (ER) diagram and a brief description of the main entities and relationships.

Carlos Andrés Sierra, Computer Engineer, M.Sc. in Computer Engineering, Lecturer at Universidad Distrital Francisco José de Caldas.

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

Methodology and Deliverables:

1. **Business Model Canvas:**
    - Complete a Business Model Canvas for your chosen application baseline (e.g., e-commerce, financial services, social media, etc.).
    - Clearly define each section: Key Partners, Key Activities, Value Propositions, Customer Relationships, Customer Segments, Channels, Key Resources, Cost Structure, Revenue Streams.
2. **Requirements Documentation:**
    - *Functional Requirements:* Detail critical actions and system behaviors (e.g., user registration, data ingestion, analytics).
    - *Non-Functional Requirements:* Include performance, scalability, availability, and security considerations.
3. **User Stories:**
    - Write at least 5 user stories for different roles (e.g., end-user, admin, manager), with a few stories focusing on each role's perspective.
    - Use the format: `As a [role], I want to [action] so that [benefit].`
    - Each story should include acceptance criteria.
4. **Initial Database Architecture:**
    - Propose a high-level architecture for your database system, considering big data and distributed requirements.
    - Include a first version of your ER diagram (hand-drawn or digital).
    - Briefly describe the main entities and relationships.
    - Consider data flow and storage solutions that align with your application needs.
5. **Delivery Format:**
    - Compile your Business Model Canvas, requirements, user stories, and ER diagram into a single PDF.
    - Organize your files in a folder named `Workshop-1` in your course project repository, with a `README.md` referencing each section.

Project Requirements:

- 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: Saturday, September 20th, 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 and completeness. This foundation will evolve as you progress through the course project.

Good luck! A solid business, user, and data definition will set the stage for a successful project implementation.