**Lab Instructions: BI and Data Warehouse Course**

**Objective:**
This lab is designed to simulate a real-world business intelligence (BI) project. Each group will act as a BI team assigned to a client. Your task is to execute SQL queries to create and populate tables in a data warehouse, identify key business objectives, and build an informative dashboard. You will receive a case study at the start of the lab.

## Lab Setup

1. **Grouping:**
    - You will be divided into groups of 5 randomly.
    - Each group will receive one case study at the beginning of the lab.
2. **Role of Teaching Assistants (TAs):**
    - TAs will act as stakeholders or clients.
    - You can ask questions to clarify business requirements or gain insights into your case study. Use professional and formal language when communicating with them.
3. **Deliverable:**
    - Submit one dashboard per group.
    - Ensure the dashboard follows good visualization practices and clearly communicates the identified business objectives.

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## Lab Tasks

**Step 1: Understand the Case Study**

- Read the case study provided.
- Discuss within your group to identify key business objectives.
- Clarify any doubts by consulting the TAs acting as your clients. Ask focused and relevant questions.

**Step 2: Execute Table Creation Queries**

- Use the provided SQL queries to create tables for the data warehouse.

**Step 3: Populate the Data Warehouse**

- Execute the SQL queries to populate the data warehouse with the data provided.
- Verify data accuracy and completeness.

**Step 4: Analyze Business Objectives**

- Collaboratively discuss the business objectives outlined in the case study.
- Determine insights and business trends to be represented in your dashboard.

**Step 5: Create the Dashboard**

- Use tools like Power BI, Tableau, or Google Data Studio to design the dashboard.
- Ensure the dashboard:
    - Is visually appealing.
    - Aligns with the business objectives.
    - Provides actionable insights based on the data.
- Follow good visualization practices:
    - Use appropriate chart types for the data (e.g., bar charts for comparisons, line charts for trends).
    - Avoid clutter and unnecessary visuals.
    - Use consistent colors and labels.
    - Include relevant filters and interactive features to enhance user experience.

**Step 6: Submit and Present**

- Submit the dashboard to the designated platform or via email as instructed.
- Be prepared to give a brief explanation of your dashboard design and insights if asked.

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## Good Practices to Keep in Mind

1. **Collaboration:** Work as a team and divide tasks efficiently.
2. **Professionalism:** Treat the TAs as real clients; communicate formally.
3. **Data Accuracy:** Ensure the data used in the dashboard is accurate and aligns with the case study requirements.
4. **Visualization Standards:** Adhere to best practices for creating effective visualizations.

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## Assessment Criteria

- **Business Objective Analysis (30%)**: Clarity, depth, and relevance of the analysis.
- **Dashboard Quality (60%)**: Visual appeal, usability, interactivity, and insights provided.
- **Team Collaboration (10%)**: How well the group worked together.

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## Support

If you face technical difficulties or have additional questions, reach out to the TAs immediately.

**Let’s work together to create insightful dashboards!**