University
Mohammed VI
Polytechnic

College of Computing

Moroccan National Health Services (MNHS)

Data Management Course

Mohammed VI Polytechnic University (UM6P)

Professor: Karima Echihabi **Program:** Computer Engineering

Session: Fall 2025

Part II: Relational Schema

Preparatory Exercises

Before starting Project Part II, students should review and solve the following textbook exercises.

Textbook Exercises

Reference: Ramakrishnan, Raghu, and Johannes Gehrke, *Database Management Systems*, 3rd Ed. [1].

- Chapter 3 (The Relational Model): Exercises 3.1, 3.13, 3.15

Objectives

- Translate your ER model into relations with primary and foreign keys.
- State integrity constraints needed to enforce semantics.
- Test the design by implementing part of it in SQL.

Logical Design Tasks

1. For each entity and relationship, list attributes and primary keys. Justify any composite keys.
2. Specify foreign keys, participation, and domain checks.
3. Implement part of the schema in SQL:
   - Write `CREATE TABLE` statements for at least three core entities (e.g., `Patient`, `Hospital`, `Appointment`).
   - Insert at least two tuples per table.
   - Write one query that lists the names of patients with scheduled appointments in the city of Benguerir.

Deliverable

- Concise relational schema with constraints.
- SQL scripts for table creation, insertion, and the query above.
- The deliverable is due on the 12th Oct. at 23:59.

References

[1] Raghu Ramakrishnan, Johannes Gehrke, and Johannes Gehrke. *Database management systems*, volume 3. McGraw-Hill New York, 2003.