

*ICS 324 – Database Systems  
Project Assignment (PHASE 1)*

## High-Level Requirements

KFUPM wants to develop a database application (system called **SOCCER@KFUPM**) for their football/soccer tournaments. The following are the requirements of the application. Read the requirements and submit the conceptual and logical (implementation) model/design. This assignment is the **Phase 1** of the project.

### Requirements or Business Rules

- Soccer tournaments are organized at KFUPM. Each **tournament** is given a name, a number, and starts and ends at predefined dates.
- A number of **teams** **participate** in each tournament. Each team has a name, a number, an address, contact numbers, a website, an email address, a main coach, a manager, and a number of players.
- Each player must be a **KFUPM** student, faculty, or staff. Each player has a KFUPM ID, a team number, a name, a date of birth, a type (student, faculty, or staff), email address, one or more telephone numbers, and a department. **A player can only be in one team in a tournament but he can be in a different team in another tournament.**
- A number of **matches** are conducted in each tournament. Each match is **played** by two teams at a date, time, and field decided before the start of the first match of the tournament.
- A **player** is chosen as **captain** for a match for each team. Also, the referees and the team leaders of each match are decided before the first match of the tournament. After each match the best player is selected.
- The goals scored by each team in a match are recorded. The time and the scorer of each goal scored in a match are also recorded. The **penalty** shootout is recorded including the player who scored or missed and the goalkeeper in the shootout. The **substitute** players are captured for match.
- The red and the yellow **cards** given to each player at a tournament are recorded. The following rules are applied within a tournament (i.e. they will not apply across tournaments):
  - A student will miss the next two matches if he takes a red card in a match.
  - A student will miss the next match once he takes the second yellow card in a tournament.
- The names, KFUPM IDs, and contacts of team managers, coaches, and referees are known before the tournament **begins**.
- There are a number of KFUPM soccer **fields** where matches are played. Each field has a name, number, description, and status (active, inactive).

### **Phase 1 Submission Details**

- **Draw a conceptual EER and a logical Relational schema diagram of SOCCER@KFUPM.**
- **Due: Tuesday, March 22, 2025.**
- Use draw.io, Visio or ERDPlus or any other **tool** to draw the conceptual diagram. Hand drawn diagram will not be accepted.
- Submit one pdf file called **P1-Group-xx.pdf** (where xx is your group number) which contains the following four pages:
  - **Cover Page:** A cover page which contains
    - Project title (**SOCCER@KFUPM**), phase number, and date.
    - Group number
    - Group members IDs and names
    - Date of submission
  - **Section 1: EER Model**
    - Your complete **EER** Model.
  - **Section 2: Logical/Relational Schema**
    - Your complete **Relational** Schema.
  - **Section 3:**
    - **State** clearly any constraints/assumptions that you added to the above requirements.
    - **List** clearly the semantic requirements that cannot be captured in your EER model.
    - **State** the contribution of each group member.

### **Important Notes**

- A **team/group** has to be minimum **two** or maximum **three** members.
- A online **form** will be posted to register your team as a group.
- Only one **member** per group should submit the pdf file. No need for all of you to submit.
- Phase 2 which includes **software** development will be announced later.