

## CS 353 Spring 2023

### Homework 2

**Due:** March 9, Thursday till midnight

**You will use the Moodle course page for submission of this assignment**

**Q.1 [60 points]** Draw an **E/R** diagram to maintain information about a football league. The following information should be captured in your model:

Players are identified by a unique id, and also have name and position.

Each player plays for a team starting from a date. Each team has a unique name. The city and stadium name of the teams are also recorded.

Each player is represented by an agent. An agent is uniquely identified by its name and city, and can represent any number of players. Players can have contracts with teams through agents. Each player can take part in different contracts each associated with a particular date range.

Teams have fan clubs. Each club is identified by its name together with the name of its team. Members of a fan club have member ids which are unique only within their clubs. The members also have a name and phone number.

Teams play matches. For each match, one team plays as the host team, while another team plays as the guest team. Each match is uniquely identified by its date together with the names of the host and guest teams. Final score of the match is also recorded.

**Q.2 [25 pts]** Translate the E/R diagrams of the previous question into the relational model (i.e., give the relation schemas for each case specifying the table names, together with the attributes, and primary key and foreign key constraints).

**Q.3 [15 pts]** Give an E/R diagram with 3 entity sets that captures the following schema:

E1(E1A, E1B)

E2(E1A, E2A, E2B)

FK: E1A references E1

E3(E1A, E3A, E3B)

FK: E1A references E1

R1(E1A1, E1A2, R1A)

FK: E1A1 references E2(E1A)

FK: E1A2 references E3(E1A)