

Assignment - 1 & 2
Topic: Design of ER Diagrams
Course: DBMS Lab [MA39204]

Department of Mathematics
Indian Institute of Technology Kharagpur

Time: **2 hours**

Date: **04-Jan-2023**

General Instructions:

1. Draw an Entity-Relationship Diagram for the database of IITKGP Cricket League (ICL).

- ❖ Several teams are there in ICL representing each Hall of Residence.
- ❖ Each team has a name, hall name, a mentor, a captain, and players.
- ❖ Each player belongs to only one team.
- ❖ Each player has a name, a jersey number, age and a Playing role (batter/ bowler/ wicket-keeper/ All-rounder).
- ❖ Each Game is played between two teams. And it has a Date, a Venue (Tata Sports Complex/ Jnan Ghosh Stadium), and a scorecard.

Construct the ER diagram for the ICL database using the same notation as taught in the class. Mention your assumptions as well as the cardinality of the relationship mappings and the key attributes in your ER diagram.

2. Draw an Entity-Relationship Diagram for the database of the Teaching System in a School.

- ❖ For each Subject each Student is taught by a single Teacher.
- ❖ Each Teacher teaches only one Subject.
- ❖ Each Subject is taught by several Teachers.
- ❖ Teachers choose their respective Textbooks.

Construct the ER diagram for this database using the same notation as taught in the class. Mention your assumptions as well as the cardinality of the relationship mappings and the key attributes in your ER diagram.

3. Draw an Entity-Relationship diagram for an E-commerce site's database.

- ❖ There are various products available on their website.
- ❖ Each product has product_id, images, description, name, price, ratings.
- ❖ There are different users who purchase different products using their website and they have the details about the user's name, phone_number, email_id, age, user_id, password.
- ❖ Products have various offers associated with them and the same offer can be applied to different products.
- ❖ Each offer has its description and validity.
- ❖ There are different brands producing different products but a particular product is produced by only a single brand.
- ❖ Each brand has its name, type, rank.

Construct the ER diagram for this database using the same notation as taught in the class. Mention your assumptions as well as the cardinality of the relationship mappings and the key attributes in your ER diagram.