Databases and information systems laboratory CS313

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Handout 5
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Open the website `https://erdplus.com/` and design ER diagrams for the following scenarios. Further translate your ER diagram to Relational schemas.[1]

1. Design a database for an automobile company to provide to its dealers to assist them in maintaining customer records and dealer inventory and to assist sales staff in ordering cars. Each vehicle is identified by a vehicle identification number (VIN). Each individual vehicle is a particular model of a particular brand offered by the company (e.g., the Duster RXS BSIV is a model of the car brand Duster of Renault company). Each model can be offered with a variety of options (like with automatic gear, bluetooth connectivity, etc.) but an individual car may have only some (or none) of the available options. The database needs to store information about models, brands, and options, as well as information about individual dealers, customers, and cars.

   Your design should include an E-R diagram, a set of relational schemas, and a list of constraints, including primary-key and foreign-key constraints.

2. Design a database for an airline. The database must keep track of customers and their reservations, flights and their status, seat assignments on individual flights, and the schedule and routing of future flights.

   Your design should include an E-R diagram, a set of relational schemas, and a list of constraints, including primary-key and foreign-key constraints.

[1] Take screenshots of your design and submit them in a zipped file, where zip file is named with your roll number and screen shots are named 1-ER.png, 1-schema.png etc

3. Design an E-R diagram for keeping track of the matches played by the Indian Football team. You should store the matches played, opponent, the scores in each match, the players in each match, and individual player statistics for each match. Summary statistics should be modeled as derived attributes.

   Your design should include an E-R diagram, a set of relational schemas, and a list of constraints, including primary-key and foreign-key constraints.

4. Design a database for a world-wide package delivery company (e.g. FedEX). The database must be able to keep track of customers (who ship items) and customers (who receive items); some customers may do both. Each package must be identifiable and trackable, so the database must be able to store the location of the package and its history of locations. Locations include trucks, planes, airports, and warehouses.

   Your design should include an E-R diagram, a set of relational schemas, and a list of constraints, including primary-key and foreign-key constraints.