

1. Draw ER diagram to depict the information needs of the following engineering enterprise:-
  - Each engineer works on a number of projects. For every engineer, a record is kept of his/her number, name, title and salary
  - For every project, a record is kept of its number, name, budget and location. Additionally, the responsibility each engineer has on a particular project and the amount of time spent on the project is noted.
  - Clients contract these projects. The client's name, address and phone number must be recorded. The contract date, i.e. date at which the client signs the contract for a specific project is also needed.
  - A record is also kept of the machinery being used for a particular project. The name, amount and the date the machinery is needed for the project is recorded.
2. Use an Entity-Relationship Diagram to depict the following requirements for a restaurant:
  - The restaurant employs a number of chefs. A record is kept of each chef's name, address, phone number and salary.
  - Each chef can prepare a number of meals. The name of the meal and the price of the meal is recorded.
  - Each meal consists of a number of ingredients. The name of the ingredient and the quantity required for that particular meal is recorded.
  - These meals are ordered by customers. A record is kept of the customers name, address and phone number. A record is kept of the time and date the meal is ordered.

State any assumptions made in the design of the E-R diagram
3. A database is being constructed to keep track of the teams and games of a sports league. A team has a number of players, not all whom participate in each game. It is desired to keep track of the players participating in each game, the positions they played in that game, and the result of the game. You can choose any of your favorite sport. State any assumptions you make.
4. A publishing company produces scientific books on various subjects. The books are written by authors who specialize in one particular subject. The company employs editors who, not necessarily being specialists in a particular area, each take sole responsibility for editing one or more publications. A publication covers essentially one of the specialist subjects and is normally written by a single author. When writing a particular book, each author works with on editor, but may submit another work for publication to be supervised by other editors. To improve their competitiveness, the company tries to employ a variety of authors, more than one author being a specialist in a particular subject.