“Databases and DB Management Systems”
Online Course

Homework Assignment for Class # 3 – Entity-Relationship Modeling

Writing Assignment

Using correct grammar and punctuation write an essay list and discuss the different levels of data abstraction as defined by ANSI/SPARC. This assignment should be a minimum of 500 words.

Problems

1. The Hammond Engineering Group (HEG) has contacted you to create a conceptual model whose application will meet the expected database requirements for its training program. The HEG administrator gives you the following description of the training group's operating environment:

   The HEG has 12 instructors and can handle up to 30 students per class. HEG offers five "advanced technology" courses, each of which may generate several classes. If a class has fewer than 10 students in it, it will be canceled. It is, therefore, possible for a course not to generate any classes during a session. Each class is taught by one instructor. Each instructor may teach up to two classes or may be assigned to do research. Each student may take up to two classes per session.

   Given this information, do the following:
   a. Draw the E-R diagram for HEG.
   b. Describe the relationship between instructor and course in terms of connectivity, cardinality, and existence dependence.

2. Create an ERD based on the Crow’s Foot model, using the following requirements.
   a. An INVOICE is written by a SALESREP. Each sales representative can write many invoices, but each invoice is written by a single sales representative.
   b. The INVOICE is written for a single CUSTOMER. However, each customer can have many invoices.
   c. An INVOICE may include many detail lines (LINE) which describe the products bought by the customer.
   d. The product information is stored in a PRODUCT entity.
   e. The product's vendor information is found in a VENDOR entity.