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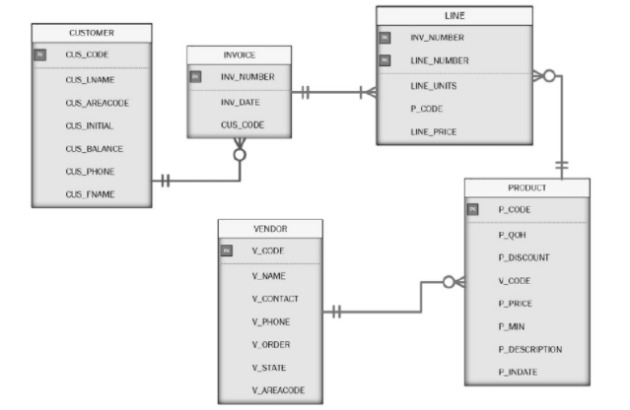
MSDS 420

Module 2. Exercise 1: Interpreting Entity Relationship Diagrams



1. Discuss the entities, attributes, and the relationship cardinalities presented in the Crow's Foot ERD.

Entities & Attributes - For crow feet ERD's there is really one entity that represents a table within the database. It's attributes are usually the table name followed by the primary keys then the data stored. In some ERDs they also list the data type and colors can indicate how the data was loaded by the ETL processes.

Relationship Cardinalities – There are 4 attributes for crows feet:

There is an o with crow's feet which means zero or more. There is a line with crows feets which means one or more. There is a double line which means a one to one relationship and there is a zero or one which means that for each instance of one table there can be zero or one instances of another.

2. Write the business rules that are reflected in the following Crow's Foot ERD. An example of a business rule in the given ERD: Every customer can have many invoices.

Rules:

- Customer to Invoice Table
    - For every Invoices there is one and only one customer code.
    - For every customer there can be zero or many invoice numbers.
- Invoice to Line Table
    - Due to the composite primary keys the meaning of the relationship cardinalities changes. On the Line table each invoice number can have multiple line numbers and therefore each invoice number can have one or multiple line numbers.

    - For each unique concurrent primary key of invoice number and line number there is only one corresponding row in the Invoice table.
- Line to Product table
    - Each Invoice and line number has one and only one product code.
    - Each product code can have one or many line and invoice numbers.
- Product to vendor table
    - Each product code has one and only one vendor code.
    - Each vendor has zero or many product codes.