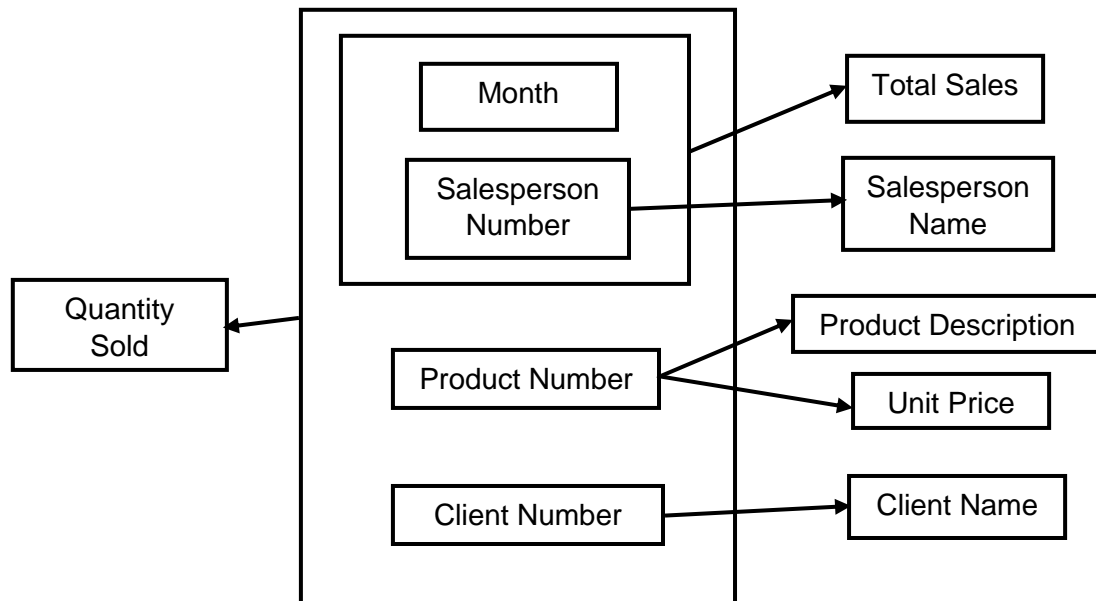


CM2102 – Database Systems
Coursework 1 – Database Design - C1722325

Question 1): Functional Dependencies



Assumptions:

- Each Client Number has 1 Client Name
- Each Salesperson Number has 1 Salesperson Name
- Each Product Number has 1 description and 1 Unit Price
- Each client can have more than 1 salesperson
- Total sales are accounted for each Salesperson Number in that particular month.
- Quantity sold is according to a particular month the specific product was sold from the salesperson to the client.

Question 2): 3NF Relations

- Salespersons (Salesperson Number, Salesperson Name)
- Clients (Client Number, Client Name)
- Products (Product Number, Product Description, Unit Price)
- TotalSales (Month, Salesperson Number, Total Sales)
- Quantities (Product Number, Client Number, Salesperson Number, Month, Quantity)

Question 3): Normalized design better than spreadsheet explanation

Normalising a table removes unwanted data dependencies within relations. Since the spreadsheet is in 1st Normal Form there is a lot of redundancy, this is eliminated when normalising the design to the 3rd Normal Form. By also normalising the table we remove insertion, deletion and updating anomalies that may occur. Every non-key attribute is dependent only on the primary key. In the spreadsheet if a record is removed more attributes can be removed with it. For example, if the 3RD row of the table is removed the batteries will also be removed from the database.