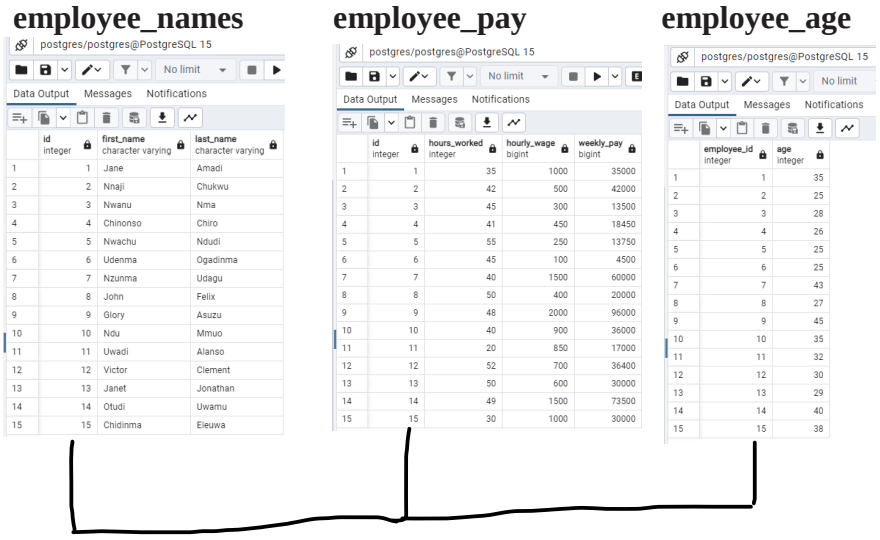
Day 1: Understanding Relational Database Normalizing Data, Relationships, Normalizing Data and Identifying Relationships

A database is a collection of data organized in a structured format defined by metadata describing that structure. Metadata defines how the data is stored within the database. SQL is a relational database. A relation is a set of columns (fields) and rows (records) collected in a table-like structure that represents a single entity (person, place, thing or event) made up of related data. Data normalization is the organization of data in a database to avoid anomalies that can lead to loss of data as the database is maintained.
In a relational database, there are three (3) types of relationship;

1. One-to-one: This is when a row in the first table is related to a row in the second table.
2. One-to-many: This is when a row in the first table is related to zero, one, or more rows in the second table, but a row in the second table is related to at least one row in the first table.
3. Many-to-many: This is when a row in the first table is related to zero, one, or more rows in the second table and a row in the second table is related to zero, one, or more rows in the first table.



This defines the relationship between the tables.