5 homework

1. 1) What is a primary key in a table?

A primary key is a column (or a set of columns) in a table that:

Uniquely identifies each row in that table.

Cannot contain duplicate values**.**

Cannot be null**.**

2) Name the two types of table relationships in Power BI.

- One-to-Many (1:*) relationship – the most common, where one value in a table is related to many values in another table.

- Many-to-Many (*:*) relationship – where multiple values in one table are related to multiple values in another table.

3)How do you create a relationship between two tables in Power BI?

Go to Model view → In Power BI Desktop, click on the Model icon (it looks like a diagram).

Drag and drop fields → Drag the primary key column from one table onto the foreign key column in the other table.

Check relationship settings → A dialog box opens where you can:

Confirm the tables and columns involved.

Select the cardinality (One-to-Many, Many-to-Many, One-to-One).

Choose the cross-filter direction (Single or Both).

Click OK → The relationship is created, and you'll see a connecting line between the tables in Model view.

4 What is a "star schema"?

A star schema is a way of organizing data in a database or Power BI model to make reporting and analysis easier.

OrderID ; CustomerID; ProductID; Quantity; OrderDate. This table is the **Fact table** in a sales dataset — usually called the **Sales** or **Orders** table.

6 Why is ProductID in Sales.csv a foreign key?

ProductID in Sales.csv is a foreign key because:

In the **Sales table (fact table)**, ProductID is not unique — it repeats for every order that contains that product.

The **Products table (dimension table)** contains the **primary key** ProductID, where each product is listed only once with details like ProductName, Category, Price, etc.

The Sales table uses ProductID to **reference** (or "point to") the product details stored in the Products table.

9 Explain why a star schema improves performance.

A star schema is **clean, efficient, and query-friendly**, which leads to **faster performance** and **easier reporting**.