Explaining the Cardinality of our Nomalized Database:

### 🔹 Reference.Country ↔ Data.Customer 1:N

A country can have many customers.

Customer.CountryID → Country.CountryID (FK)

### 🔹 Reference.Color ↔ Data.Stock 1:N

A color can be applied to many stock vehicles.

Stock.ColorID → Color.ColorID (FK)

### 🔹 Reference.Country ↔ Data.Make 1:N A country can manufacture multiple car makes.

Make.CountryID → Country.CountryID (FK)

### 🔹 Data.Make ↔ Data.Model 1:N

One make can have many models.

Model.MakeID → Make.MakeID (FK)

### 🔹 Data.Model ↔ Data.Stock 1:N

One model can have many stock entries.

Stock.ModelID → Model.ModelID (FK)

### 🔹 Data.Customer ↔ Data.Sales 1:N

A customer can make multiple purchases.

Sales.CustomerID → Customer.CustomerID (FK)

### 

### 🔹 Data.Sales ↔ Data.SalesDetails 1:N

A single sale can contain multiple line items.

SalesDetails.SalesID → Sales.SalesID (FK)

### 🔹 Data.Stock ↔ Data.SalesDetails 1:1 or 1:N

A stock vehicle can be part of one or more sales lines.

SalesDetails.StockID → Stock.StockCode (FK)

### 🔹 Reference.Color ↔ Data.PivotTable 1:1

One row per color with sales amounts for 2015–2018.

PivotTable.ColorID → Color.ColorID (FK)

## **📘 Summary Table**

| **From Table** | **To Table** | **Cardinality** | **Notes** |
| --- | --- | --- | --- |
| Country | Customer | 1:N | Each country has many customers |
| Country | Make | 1:N | Each country can be origin of many makes |
| Color | Stock | 1:N | Each color used in many vehicles |
| Make | Model | 1:N | A make has many models |
| Model | Stock | 1:N | A model maps to many stock vehicles |
| Customer | Sales | 1:N | A customer can place many sales orders |
| Sales | SalesDetails | 1:N | A sale has many line items |
| Stock | SalesDetails | 1:1 or 1:N | Ideally 1:1 (one car sold once) |
| Color | PivotTable | 1:1 | One color per Pivot row |