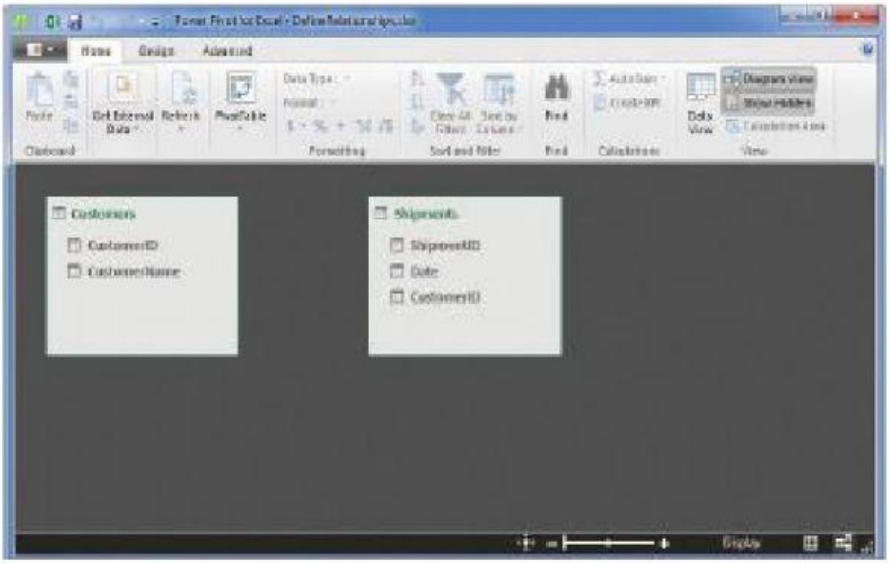
Lesson 2 Defining Relationships between Tables

Define relationships between tables.

One of the fundamental principals of good database is to store data abput specific business objects, such as customers,products or orders. In a table by itself, separate from the other tables in the database. For example, you might store data about customers in one table and data abput shipments in another.



Each table has one column, or field, that contains a unique value for each row. This type of column, called a **key**, makes it possible to distinguish a row from every other row. E.g. a table listing customers could have a **Customer ID field** as the key, with the same field appearing in a table named **Orders**, which tracks the *date*, *time*, *value* and *identity* of the customer who placed each order**.**

Tip

The best keys are arbitrary numerical values. If you try to store information in a key field, you will likely run into issues of duplication that make processing your data harder, not easier.

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You can create connections between tables by identifying fields that have in common. E.g. consider a Customer table that has two fields.- Customer ID and Customer Name – and an orders table that has three fields – *Order ID, Customer ID, and Order Price. The Customer ID field,* appears in both tables, so it can be established a link, or relationship.

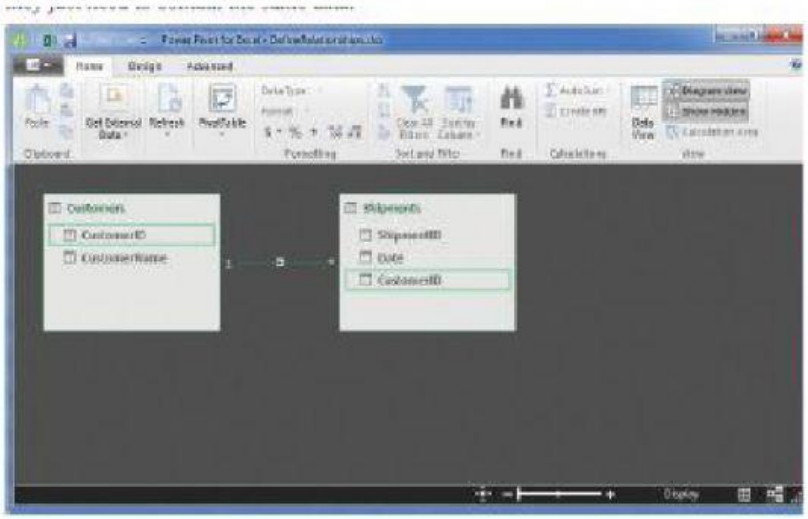
IMPORTANT

You must add Excel tables to the Data Model to define relationships between them

In the **Customer** table, each ***Customer ID*** field value occurs once, so that column is called a *primary key*. The Customer ID field also occurs in the Order table, but because it's possible for a customer to place more than one order, the Customer ID field's values can repeat. When a key field appears in another table in which it doesn't distinguish each row every other row, it's called a **foreign key**.

When you create a relationship, you link the *primary* key field one table to the corresponding foreign key field in another table. Although it's easier to spot the fields if they have the same name, such as *Customer ID*, they don't have to have the same name, they just need to contain the same data.

Below a Diagram View of a Data Model with a relationship between two tables.



After you define a relationship in the Data Model, you can create PivotTables that use data from both Excel tables. You can also edit or delete realtionships if necessary.

To display the Data Model in Diagram View.

1. If necessary, on the *Data* tab, in the Data Tools group, click **Manage Data Model.**

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2. In the *Power Pivot* for *Excel* window, on the Home tab, in the **View** group, click **Diagram View**.

To display the Data Model in Data View.

1. If necessary, click **Manage Data Model.**
2. In the **Power Pivot** for *Excel* window, in the **View** group, click **Data View**.

To define a relationship between tables.

1. If necessary, click **Manage Data Model**.
2. In the **Power Pivot** for *Excel* window, in the View group, click **Diagram View**.
3. In the **Diagram** View window, drag the field from the source table to the corresponding field in the table that includes the source *field's values*.
4. When the pointer changes to a *curved* arrow, release the mouse button to create the relationship.

OR

1. In the *Power Pivot* on the **Design** tab of the ribbon, in the **Relationships** group, click **Create Relationships.**
2. In the **Create Relationships** dialog box, click the **Table 1** arrow, and then click the table which the field you want to link is the table's *primary key fields.*
3. In the **Column** list on the left, click the field you want to *link* the other **table**.
4. Click the **Table 2** arrow, and then click the table in which the field you want to link is a *foreign key field*.
5. In the **Column** list on the right, click the field that corresponds to the *primary key* field from the source table.
6. Click **OK**.

To view the Excel table that provides data to a linked table in the Data Model.

1. In Power Pivot, click Diagram View.
2. In the viewing pane, click the table you want to view.
3. On the **Linked table** tab of the ribbon, click **Go to Excel Table.**

To edit an existing relationship

1. In Power Pivot, on the Design view, click Manage Relationships.
2. In the **Manage Relationship** dialog box, click the *relationship* you want to edit.

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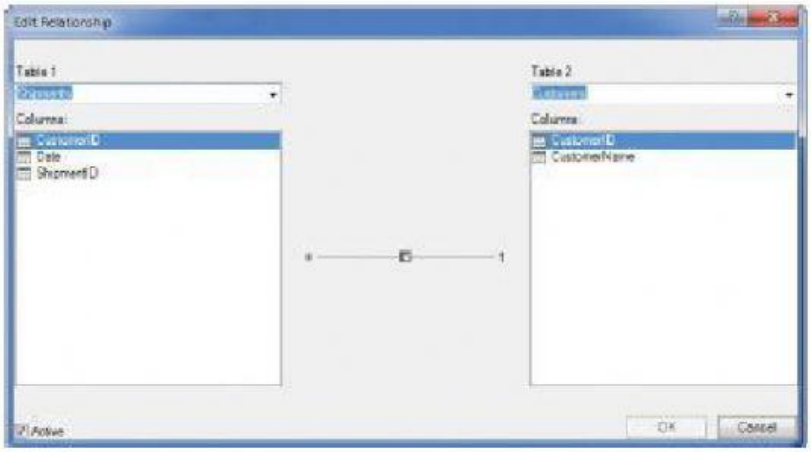
3. Click **Edit**.



Editing relationships between tables in the Data Model

To delete an existing relationships.

1. In *Power Pivot,* click **Manage Relationships**.
2. In the *Manage Relationships* dialog box, click the relationship you want to **delete**.
3. Click Delete.
4. In the *confirmation* dialog box, that appears, click **OK**.
5. Click **Close**.

Questions

1. **Explain the steps for defining relationships between tables.**

2. **What is important that you must add to Data Model to define relationships.**

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3. **Explain the steps to edit and delete relationships.**

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