

Module 5: Modeling Data

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Note: Lab Solution is present in `Desktop\power-bi-quickstart\Labfiles\Lab05\Solution` folder:

Lab: Modeling Data

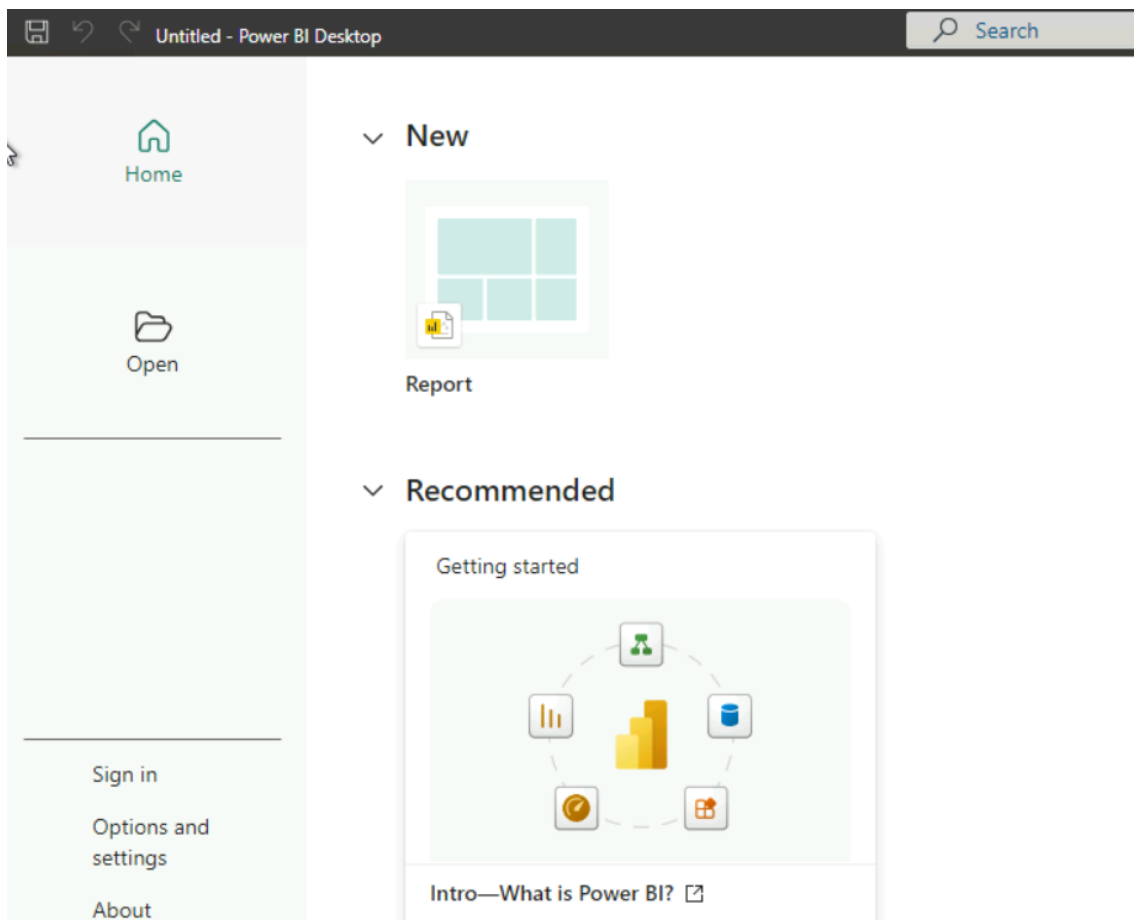
Exercise 1: Create Relationships

Task 1: Preparing the Environment

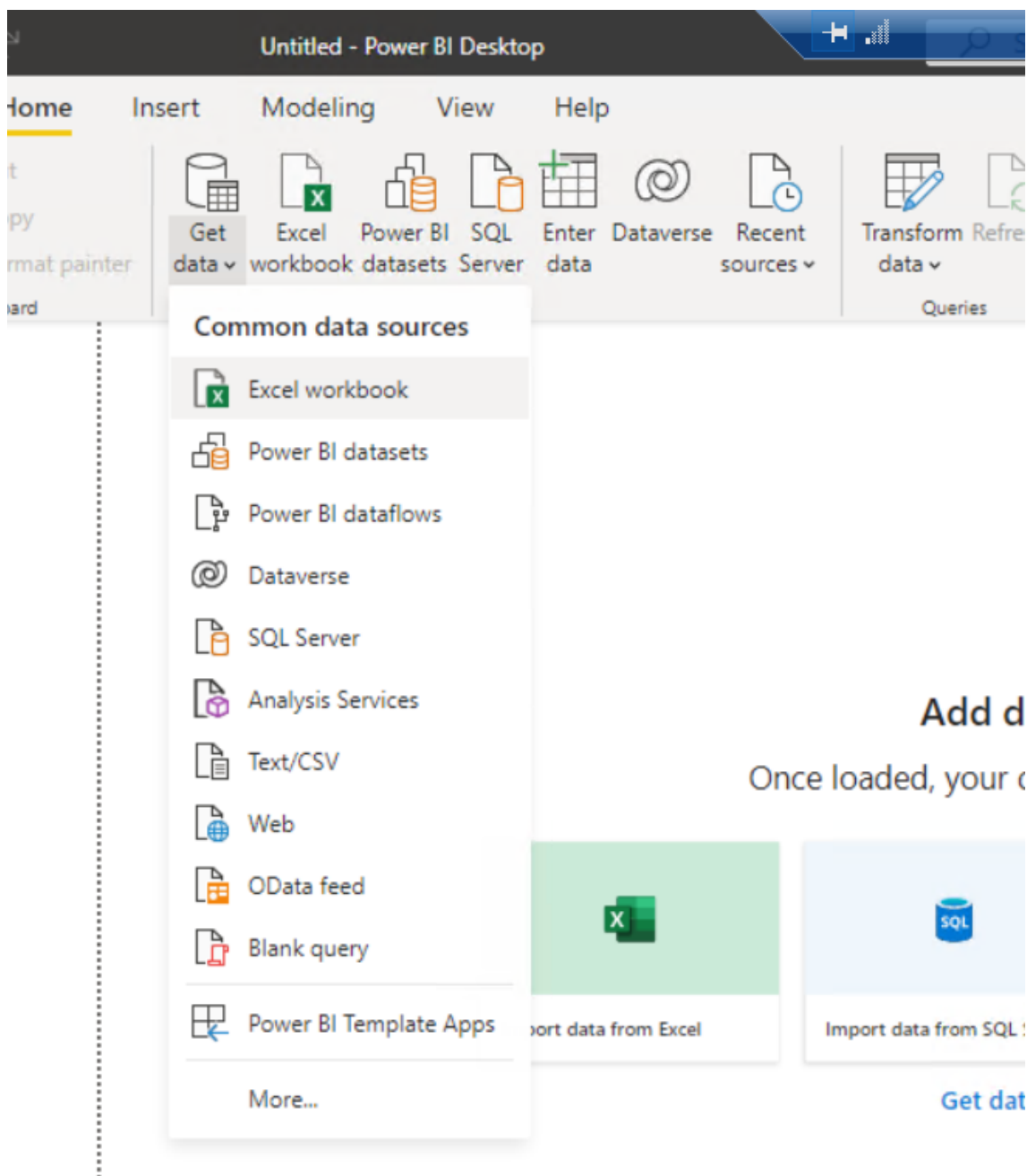
Lab environment is already setup.

Task 2: Automatic Relationships

1. Make sure previous tasks was completed.
2. On the Taskbar, click **Power BI Desktop**.
3. Click **New > Report**:



5. In the **Power BI Desktop** window, click **Get data**.
6. In the **Get Data** dialog box, ensure **Excel Workbook** is selected.



7. In the **Open** dialog box, navigate to **Desktop\power-bi-quickstart\Labfiles\Lab05\Starter\Project**, click **Adventure Works Sales Data.xlsx**, and then click **Open**.
8. In the **Navigator** dialog box, select the **DimCurrency**, **DimCustomer**, **DimDate**, **DimProduct**, **DimPromotion**, **DimSalesTerritory**, and **FactInternetSales** check boxes, and then click **Load**.

Navigator

Display Options ▾

Adventure Works Sales Data.xlsx [14]

- ☐ Table1
- ☐ Table2
- ☐ Table3
- ☐ Table5
- ☐ Table6
- ☐ Table7
- ☐ Table8
- ☒ DimCurrency
- ☒ DimCustomer
- ☒ DimDate
- ☒ DimProduct
- ☒ DimPromotion
- ☒ DimSalesTerritory
- ☒ FactInternetSales

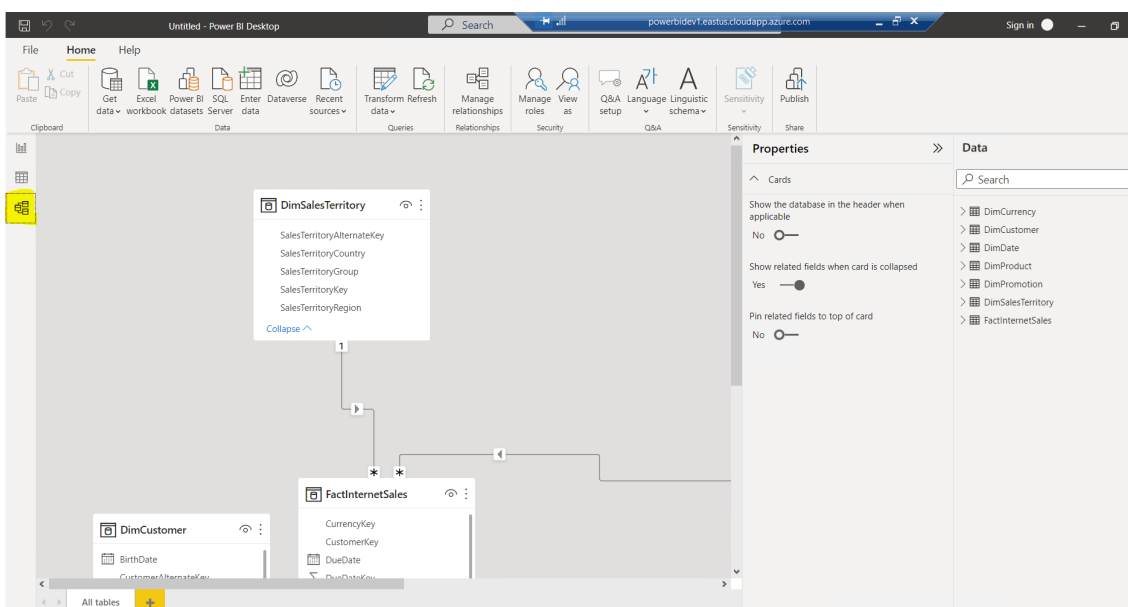
FactInternetSales

| ProductKey | OrderDateKey | DueDateKey | ShipDateKey | CustomerKey | Pro |
|------------|--------------|------------|-------------|-------------|-----|
| 310 | 20050701 | 20050713 | 20050708 | 21768 | |
| 346 | 20050701 | 20050713 | 20050708 | 28389 | |
| 346 | 20050701 | 20050713 | 20050708 | 25863 | |
| 336 | 20050701 | 20050713 | 20050708 | 14501 | |
| 346 | 20050701 | 20050713 | 20050708 | 11003 | |
| 311 | 20050702 | 20050714 | 20050709 | 27645 | |
| 310 | 20050702 | 20050714 | 20050709 | 16624 | |
| 351 | 20050702 | 20050714 | 20050709 | 11005 | |
| 344 | 20050702 | 20050714 | 20050709 | 11011 | |
| 312 | 20050703 | 20050715 | 20050710 | 27621 | |
| 312 | 20050703 | 20050715 | 20050710 | 27616 | |
| 330 | 20050703 | 20050715 | 20050710 | 20042 | |
| 313 | 20050703 | 20050715 | 20050710 | 16351 | |
| 314 | 20050703 | 20050715 | 20050710 | 16517 | |
| 314 | 20050704 | 20050716 | 20050711 | 27606 | |
| 311 | 20050704 | 20050716 | 20050711 | 13513 | |
| 310 | 20050705 | 20050717 | 20050712 | 27601 | |
| 311 | 20050705 | 20050717 | 20050712 | 13591 | |
| 314 | 20050705 | 20050717 | 20050712 | 16483 | |
| 311 | 20050705 | 20050717 | 20050712 | 16529 | |
| 336 | 20050705 | 20050717 | 20050712 | 25249 | |
| 311 | 20050706 | 20050718 | 20050713 | 27668 | |

The data in the preview has been truncated due to size limits.

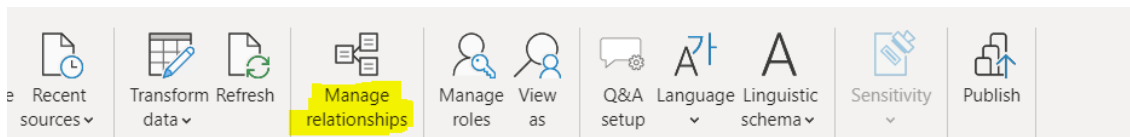
Load
Transform Data
Cancel

14. In the views pane on the left-hand side, click **Model**.



15. On the **Home** tab, click **Manage Relationships**.

16. In the **Manage relationships** dialog box, click **New**.



Manage relationships

| Active | From: Table (Column) | To: Table (Column) |
|-------------------------------------|---------------------------------------|---------------------------------------|
| <input checked="" type="checkbox"/> | DimCustomer (CustomerKey) | FactInternetSales (CustomerKey) |
| <input checked="" type="checkbox"/> | FactInternetSales (CurrencyKey) | DimCurrency (CurrencyKey) |
| <input checked="" type="checkbox"/> | FactInternetSales (ProductKey) | DimProduct (ProductKey) |
| <input checked="" type="checkbox"/> | FactInternetSales (PromotionKey) | DimPromotion (PromotionKey) |
| <input checked="" type="checkbox"/> | FactInternetSales (SalesTerritoryKey) | DimSalesTerritory (SalesTerritoryKey) |

17. In the **New relationship** dialog box, in the top table list, click **FactInternetSales**. When the table preview appears below, click the **OrderDateKey** column.
18. In the bottom table list, click **DimDate**. When the table preview appears below, click the **DateKey** column.
19. Check that the **Cardinality** is selected to **Many to one (*:1)**, the **Cross filter direction** is **Single**, and **Make this relationship active** is selected, and then click **OK**.

New relationship

Select tables and columns that are related.

FactInternetSales

| ProductKey | OrderDateKey | DueDateKey | ShipDateKey | CustomerKey | PromotionKey | CurrencyKey | SalesOrderNumber |
|------------|--------------|------------|-------------|-------------|--------------|-------------|------------------|
| 310 | 20050702 | 20050714 | 20050709 | 16624 | 1 | 6 | 43659 |
| 313 | 20050703 | 20050715 | 20050710 | 16351 | 1 | 6 | 43660 |
| 314 | 20050703 | 20050715 | 20050710 | 16517 | 1 | 6 | 43661 |

DimDate

| DateKey | FullDateAlternateKey | DayNumberOfWeek | EnglishDayNameOfWeek | SpanishDayNameOfWeek | FrenchDayNameOfWeek |
|----------|------------------------|-----------------|----------------------|----------------------|---------------------|
| 20050701 | Friday, July 1, 2005 | 6 | Friday | Viernes | Vendredi |
| 20050702 | Saturday, July 2, 2005 | 7 | Saturday | Sábado | Samedi |
| 20050703 | Sunday, July 3, 2005 | 1 | Sunday | Domingo | Dimanche |

Cardinality

Many to one (*:1)

Cross filter direction

Single

☒ Make this relationship active

☐ Apply security filter in both directions

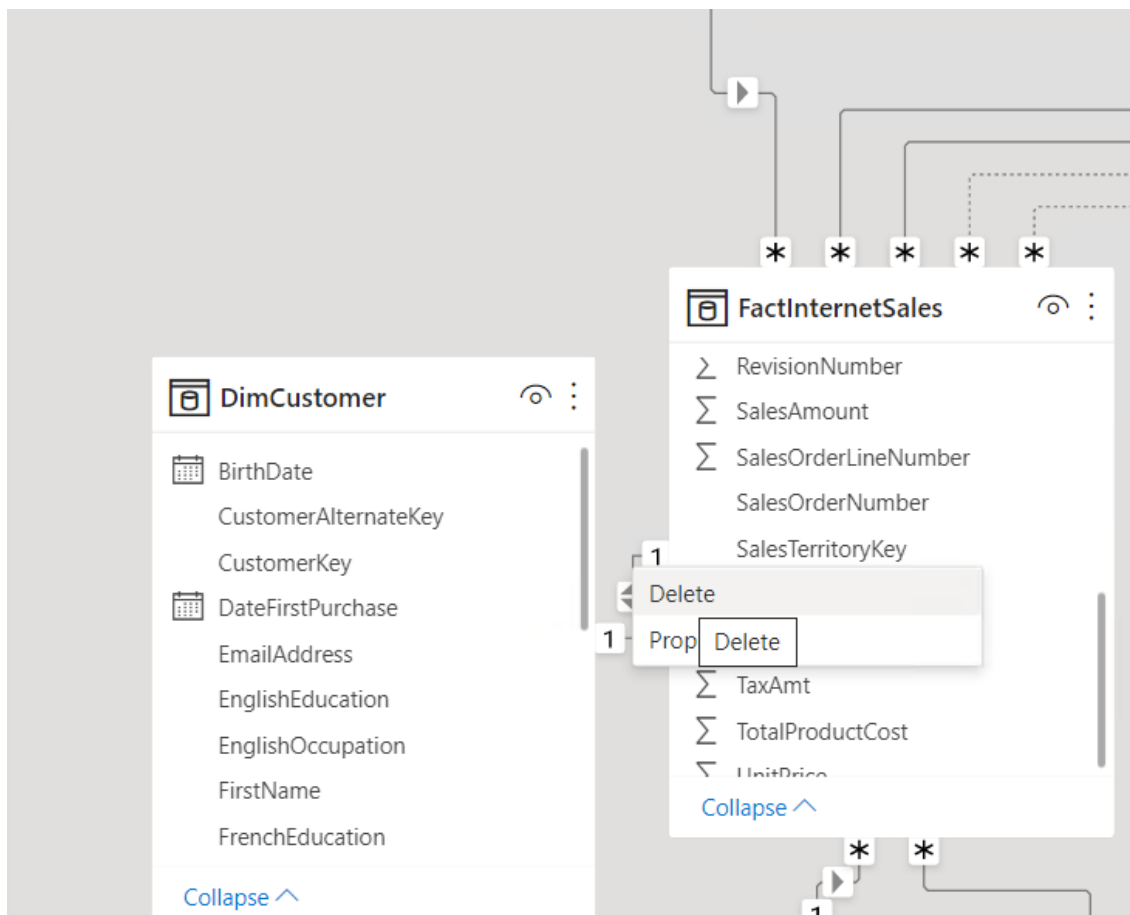
☐ Assume referential integrity

OK

Cancel

20. In the **Manage relationships** dialog box, click **Close**.
21. In the diagram, in the **FactInternetSales** table, click the **DueDateKey** column. Drag the **DueDateKey** column to the **DateKey** column of the **DimDate** table.
22. In the diagram, in the **FactInternetSales** table, click the **ShipDateKey** column. Drag the **ShipDateKey** column to the **DateKey** column of the **DimDate** table.
23. On the **Home** tab, click **Manage Relationships**.
24. In the **Manage relationships** dialog box, double-click the **FactInternetSales (CurrencyKey)** relationship.
25. In the **Edit relationships** dialog box, in the **Cross filter direction** list, ensure **Single** is selected, and then click **OK**.
26. In the **Manage relationships** dialog box, double-click the **FactInternetSales (ProductKey)** relationship.
27. In the **Edit relationships** dialog box, in the **Cross filter direction** list, ensure **Single** is selected, and then click **OK**.
28. In the **Manage relationships** dialog box, double-click the **FactInternetSales (PromotionKey)** relationship.
29. In the **Edit relationships** dialog box, in the **Cross filter direction** list, ensure **Single** is selected, and then click **OK**.

30. In the **Manage relationships** dialog box, double-click the **FactInternetSales (SalesTerritoryKey)** relationship.
31. In the **Edit relationships** dialog box, in the **Cross filter direction** list, ensure **Single** is selected, and then click **OK**.
32. In the **Manage relationships** dialog box, click **Close**.
33. Right-click the relationship line between **FactInternetSales** and **DimCustomer**, and then click **Delete**.



34. In the **Delete Relationship** dialog box, click **Yes**.

Delete Relationship



Do you want to delete this table relationship? Visuals using data from the related tables might be broken.

Yes

Cancel

35. On the **Home** tab, click **Manage Relationships**.
36. In the **Manage relationships** dialog box, click **New**.
37. In the **New relationship** dialog box, in the top table list, click **FactInternetSales**, and in the data preview, click **CustomerKey**.
38. In the bottom table list, click **DimCustomer**, and in the data preview, click **CustomerKey**.
39. In the **Cardinality** list, click **Many to one (*:1)**, and then click **OK**.
40. In the **Manage relationships** dialog box, click **Close**.
41. On the **File** menu, click **Save**.
42. In the **Save As** dialog box, navigate to the **Desktop\power-bi-quickstart\Labfiles\Lab05\Starter** folder, and in the **File name** box, type **Adventure Works Sales 5.pbix**, and then click **Save**.

Task 3: Manual Relationships

1. In Power BI Desktop, on the **Home** tab, click the **Get Data** arrow, and then click **Excel**.
2. In the **Open** dialog box, navigate to **Desktop\power-bi-quickstart\Labfiles\Lab05\Starter\Project**, click **Adventure Works Product Categories.xlsx**, and then click **Open**.
3. In the **Navigator** dialog box, select the **DimProductCategory**, and **DimProductSubcategory** check boxes, and then click **Load**.

Navigator

Display Options ▾

Adventure Works Product Categories.xlsx [4]

- ☐ Table1
- ☐ Table2
- ☒ DimProductCategory
- ☒ DimProductSubcategory

DimProductSubcategory

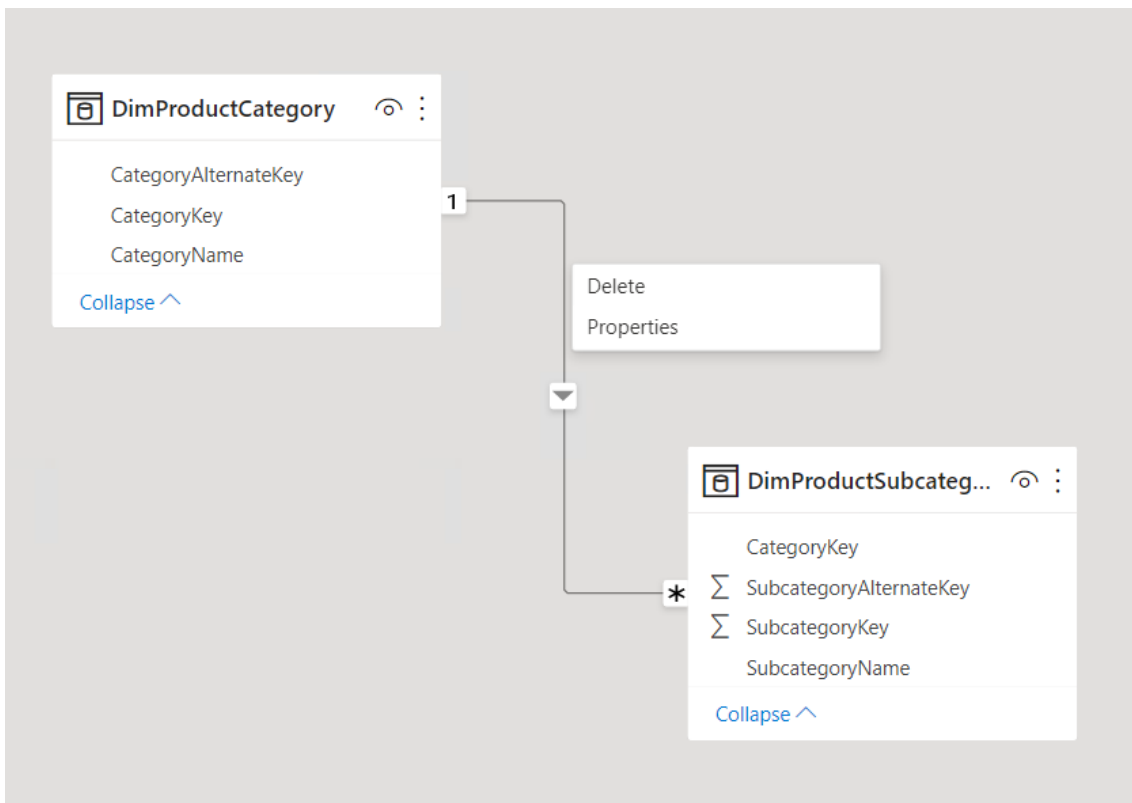
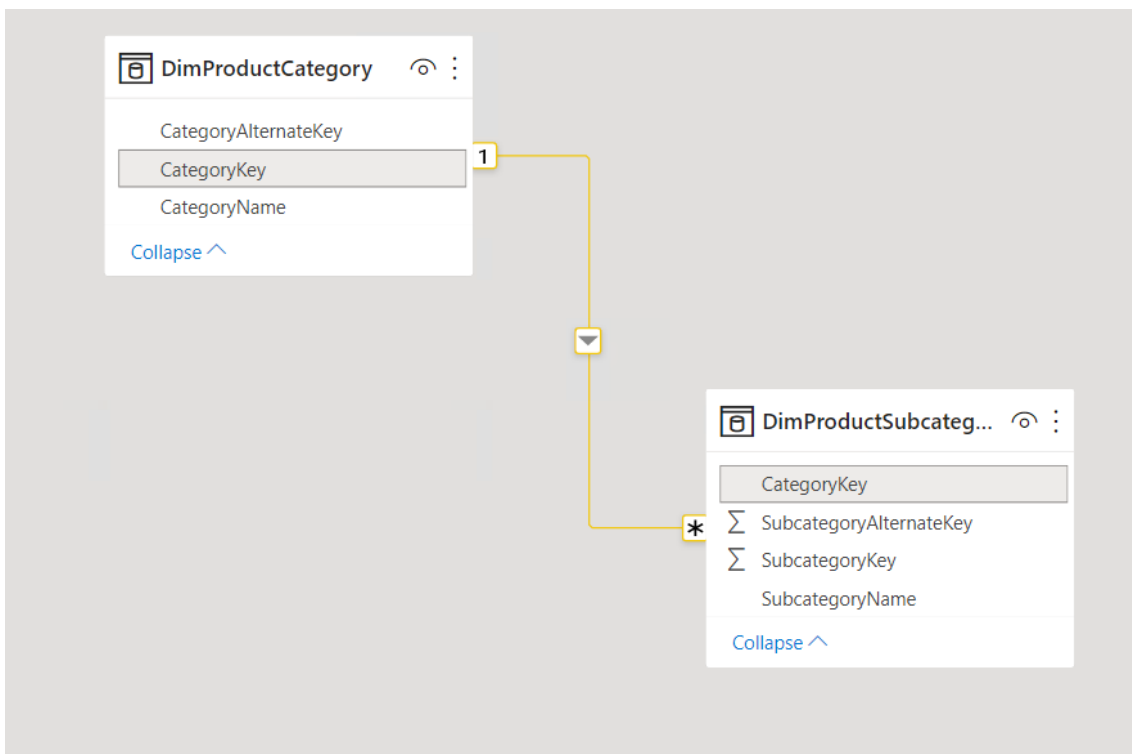
| SubcategoryKey | SubcategoryAlternateKey | SubcategoryName | CategoryKey |
|----------------|-------------------------|-----------------|-------------|
| 1 | 1 | Mountain Bikes | |
| 2 | 2 | Road Bikes | |
| 3 | 3 | Touring Bikes | |
| 4 | 4 | Handlebars | |
| 5 | 5 | Bottom Brackets | |
| 6 | 6 | Brakes | |
| 7 | 7 | Chains | |
| 8 | 8 | Cranksets | |
| 9 | 9 | Derailleurs | |
| 10 | 10 | Forks | |
| 11 | 11 | Headsets | |
| 12 | 12 | Mountain Frames | |
| 13 | 13 | Pedals | |
| 14 | 14 | Road Frames | |
| 15 | 15 | Saddles | |
| 16 | 16 | Touring Frames | |
| 17 | 17 | Wheels | |
| 18 | 18 | Bib-Shorts | |
| 19 | 19 | Caps | |
| 20 | 20 | Gloves | |
| 21 | 21 | Jerseys | |
| 22 | 22 | Shorts | |
| 23 | 23 | Socks | |

Load

Transform Data

Cancel

- In the Model pane, look at the relationship that Power BI has created between the two tables.
- Right-click the relationship line between **DimProductCategory**, and **DimProductSubcategory**, and then click **Delete**.



6. In the **Delete Relationship** dialog box, click **Delete**.

- In the **DimProductSubcategory** table, drag the **CategoryKey** column to the **CategoryKey** column in the **DimProductCategory** table.
- Double-click the relationship line between **DimProductCategory**, and **DimProductSubcategory**.
- In the **Edit relationship** dialog box, ensure the **Cardinality** is set to a **Many to one (*:1)** relationship.
- In the **Cross filter direction** list, click **Both**, and then click **OK**.
- In the **DimProduct** table, drag the **ProductSubcategoryKey** column to the **SubcategoryKey** column in the **DimProductSubcategory** table, to create a **Many to one (*:1)** relationship.
- Right-click the relationship line between **DimProductSubcategory**, and **DimProduct**, and then click **Properties**.
- In the **Edit relationship** dialog box, in the **Cross filter direction** list, click **Both**, and then click **OK**.
- On the **File** menu, click **Save**.
- Leave Power BI Desktop open for the next exercise.

Exercise 2: Calculations

Task 1: Adding Calculated Columns

- In Power BI Desktop, in the views pane on the left-hand side, click **Data**.
- In the **Data** pane, right-click **DimCustomer**, and then click **New column**.

| CustomerKey | GeographyKey | CustomerAlternateKey | FirstName | LastName | BirthDate | MaritalStatus | Gender | EmailAddress | YearlyIncome | TotalChildren | NumberChildren |
|-------------|--------------|----------------------|-----------|----------|-------------------------------|---------------|--------|--------------------------------|--------------|---------------|----------------|
| 11012 | 611 | AW00011012 | Lauren | Walker | Thursday, January 18, 1968 | M | F | lauren41@adventure-works.com | 100000 | 2 | |
| 11017 | 39 | AW00011017 | Shannon | Wang | Monday, June 26, 1944 | S | F | shannon1@adventure-works.com | 20000 | 4 | |
| 11018 | 32 | AW00011018 | Clarence | Rai | Monday, October 9, 1944 | S | M | clarence32@adventure-works.com | 30000 | 2 | |
| 11019 | 52 | AW00011019 | Luke | Lal | Tuesday, March 7, 1978 | S | M | luke18@adventure-works.com | 40000 | | 2 |
| 11020 | 53 | AW00011020 | Jordan | King | Wednesday, September 20, 1978 | S | M | jordan73@adventure-works.com | 40000 | | |
| 11024 | 311 | AW00011024 | Russell | Xie | Sunday, September 17, 1978 | M | M | russell7@adventure-works.com | 60000 | | |
| 11026 | 4 | AW00011026 | Harold | Sai | Wednesday, April 3, 1946 | S | M | harold6@adventure-works.com | 30000 | | |
| 11027 | 40 | AW00011027 | Jessie | Zhao | Saturday, December 7, 1946 | M | M | jessie16@adventure-works.com | 30000 | | |
| 11028 | 17 | AW00011028 | Jill | Jimenez | Thursday, April 11, 1946 | M | F | jill13@adventure-works.com | 30000 | | |
| 11029 | 32 | AW00011029 | Jimmy | Moreno | Saturday, December 21, 1946 | M | M | jimmy9@adventure-works.com | 30000 | | |
| 11031 | 8 | AW00011031 | Theresa | Ramos | Friday, August 22, 1947 | M | F | theresa13@adventure-works.com | 20000 | | |
| 11032 | 35 | AW00011032 | Denise | Stone | Wednesday, June 11, 1947 | M | F | denise10@adventure-works.com | 20000 | | |
| 11033 | 9 | AW00011033 | Jaime | Nath | Tuesday, September 23, 1947 | M | M | jaime41@adventure-works.com | 20000 | | |
| 11034 | 12 | AW00011034 | Ebony | Gonzalez | Thursday, June 19, 1947 | M | F | ebony19@adventure-works.com | 20000 | | |
| 11036 | 343 | AW00011036 | Jennifer | Russell | Monday, December 18, 1978 | M | F | jennifer93@adventure-works.com | 60000 | | |
| 11037 | 49 | AW00011037 | Chloe | Garcia | Sunday, November 27, 1977 | S | F | chloe27@adventure-works.com | 40000 | | |
| 11039 | 19 | AW00011039 | Marc | Martin | Friday, December 17, 1948 | M | M | marc3@adventure-works.com | 30000 | | |
| 11040 | 642 | AW00011040 | Jesse | Murphy | Monday, August 1, 1977 | M | M | jesse15@adventure-works.com | 30000 | | |
| 11041 | 325 | AW00011041 | Amanda | Carter | Sunday, October 16, 1977 | M | F | amanda53@adventure-works.com | 60000 | | |
| 11042 | 338 | AW00011042 | Megan | Sanchez | Monday, June 13, 1977 | M | F | megan28@adventure-works.com | 70000 | | |
| 11043 | 325 | AW00011043 | Nathan | Simmons | Tuesday, February 24, 1976 | M | M | nathan11@adventure-works.com | 60000 | | |
| 11045 | 8 | AW00011045 | Leonard | Nara | Friday, May 19, 1950 | S | M | leonard18@adventure-works.com | 30000 | | |
| 11046 | 6 | AW00011046 | Christine | Yuan | Wednesday, March 22, 1950 | M | F | christine4@adventure-works.com | 30000 | | 3 |
| 11047 | 34 | AW00011047 | Jaclyn | Lu | Monday, February 27, 1950 | M | F | jaclyn12@adventure-works.com | 30000 | | 3 |
| 11048 | 39 | AW00011048 | Jeremy | Powell | Wednesday, November 22, 1950 | M | M | jeremy26@adventure-works.com | 30000 | | 3 |
| 11049 | 307 | AW00011049 | Carol | Rai | Friday, July 18, 1980 | S | F | carol8@adventure-works.com | 40000 | | 0 |
| 11050 | 31 | AW00011050 | Alan | Zheng | Friday, September 7, 1951 | M | M | alan23@adventure-works.com | 30000 | | 3 |

- In the formula bar, highlight **Column =**, type the following script, and then press Enter:

```
IncomeStatus = IF (DimCustomer[YearlyIncome] < 25000, "Lower Income",
IF (AND(DimCustomer[YearlyIncome] >= 25000, DimCustomer[YearlyIncome] < 60000),
"Middle Income",
IF (AND(DimCustomer[YearlyIncome] >= 60000, DimCustomer[YearlyIncome] <
100000), "Higher Income",
```

```
IF (DimCustomer[YearlyIncome] >= 100000, "Very High Income", "Other"))))
```

The screenshot shows the Power BI interface with a DAX formula bar and a data table. The formula bar contains the following DAX expression:

```
IncomeStatus = IF (DimCustomer[YearlyIncome] < 25000, "Lower Income",
IF (AND(DimCustomer[YearlyIncome] >= 25000, DimCustomer[YearlyIncome] < 60000), "Middle Income",
IF (AND(DimCustomer[YearlyIncome] >= 60000, DimCustomer[YearlyIncome] < 100000), "Higher Income",
IF (DimCustomer[YearlyIncome] >= 100000, "Very High Income", "Other"))))
```

The data table below shows the results of this calculation. The columns are: EnglishEducation, SpanishEducation, FrenchEducation, EnglishOccupation, SpanishOccupation, FrenchOccupation, HouseOwnerFlag, NumberCarsOwned, DateFirstPurchase, and IncomeStatus.

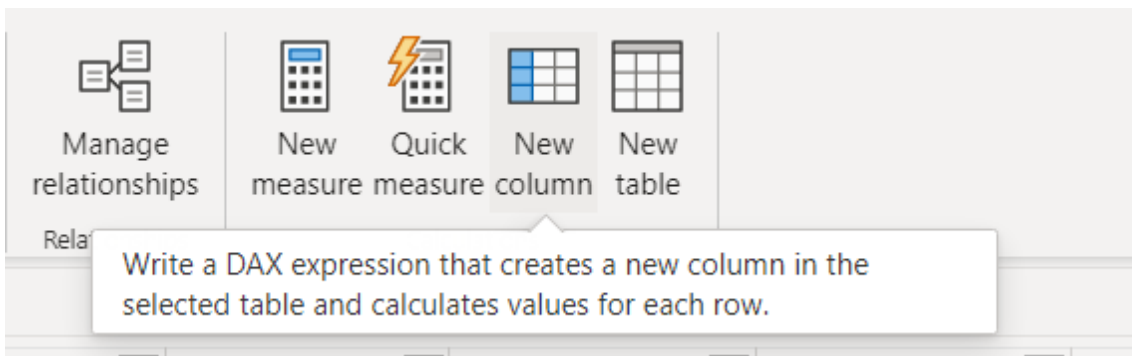
| EnglishEducation | SpanishEducation | FrenchEducation | EnglishOccupation | SpanishOccupation | FrenchOccupation | HouseOwnerFlag | NumberCarsOwned | DateFirstPurchase | IncomeStatus |
|-----------------------|------------------------------------|-----------------|-------------------|----------------------|------------------|----------------|-----------------|-----------------------------|------------------|
| 0 Bachelors | Licenciatura | Bac + 4 | Management | Gestión | Direction | 1 | 2 | Monday, September 17, 2007 | Very High Income |
| 0 High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Friday, July 15, 2005 | Lower Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, July 20, 2005 | Middle Income |
| 0 High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Thursday, August 16, 2007 | Middle Income |
| 0 High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Monday, July 2, 2007 | Middle Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Saturday, December 29, 2007 | Higher Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 0 | 2 | Tuesday, July 26, 2005 | Middle Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Tuesday, July 19, 2005 | Middle Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 29, 2005 | Middle Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 22, 2005 | Middle Income |
| 0 High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Thursday, August 4, 2005 | Lower Income |
| 0 High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Sunday, August 21, 2005 | Lower Income |
| 0 High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Thursday, August 18, 2005 | Lower Income |
| 0 High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Thursday, August 4, 2005 | Lower Income |
| 0 High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Thursday, August 4, 2005 | Lower Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Thursday, July 26, 2007 | Higher Income |
| 0 Partial High School | Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 0 | 2 | Tuesday, July 24, 2007 | Middle Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, August 10, 2005 | Middle Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Friday, October 5, 2007 | Middle Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Wednesday, July 18, 2007 | Higher Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Wednesday, July 25, 2007 | Higher Income |
| 0 Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Friday, November 9, 2007 | Higher Income |
| 0 High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Friday, October 12, 2007 | Middle Income |

4. On the **Modeling** tab, in the **Calculations** group, click **New Column**.

5. In the formula bar, highlight **Column =**, type the following script, and then press Enter:

```
DaysSinceFirstPurchase = DATEDIFF(DimCustomer[DateFirstPurchase], TODAY(), DAY)
```

6. On the **Modeling** tab, in the **Calculations** group, click **New Column**.



7. In the formula bar, highlight **Column =**, type the following script, and then press Enter:

```
FullName = [FirstName] & " " & [LastName]
```

8. On the **Modeling** tab, in the **Calculations** group, click **New Column**.

9. In the formula bar, highlight **Column =**, type the following script, and then press Enter:

```
MaleFemale = IF([Gender] = "M", "Male", "Female")
```

10. On the **Modeling** tab, in the **Calculations** group, click **New Column**.

11. In the formula bar, highlight **Column =**, type the following script, and then press Enter:

```
Relationship = IF([MaritalStatus] = "M", "Married", "Single")
```

| enchEducation | EnglishOccupation | SpanishOccupation | FrenchOccupation | HouseOwnerFlag | NumberCarsOwned | DateFirstPurchase | IncomeStatus | DaysSinceFirstPurchase | FullName | Relationship |
|---------------|-------------------|----------------------|------------------|----------------|-----------------|-----------------------------|------------------|------------------------|------------------|--------------|
| sc + 4 | Management | Gestión | Direction | 1 | 2 | Monday, September 17, 2007 | Very High Income | 5296 | Lauren Walker | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Friday, July 15, 2005 | Lower Income | 6090 | Shannon Wang | Single |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Wednesday, July 20, 2005 | Middle Income | 6085 | Clarence Rai | Single |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Thursday, August 16, 2007 | Middle Income | 5328 | Luke Lal | Single |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Monday, July 2, 2007 | Middle Income | 5373 | Jordan King | Single |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Saturday, December 29, 2007 | Higher Income | 5193 | Russell Xie | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Tuesday, July 26, 2005 | Middle Income | 6079 | Harold Sai | Single |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Tuesday, July 19, 2005 | Middle Income | 6086 | Jessie Zhao | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Friday, July 29, 2005 | Middle Income | 6076 | Jill Jimenez | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Friday, July 22, 2005 | Middle Income | 6083 | Jimmy Moreno | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Thursday, August 4, 2005 | Lower Income | 6070 | Theresa Ramos | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Saturday, August 21, 2005 | Lower Income | 6053 | Denise Stone | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Sunday, August 18, 2005 | Lower Income | 6056 | Jaime Nath | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Thursday, August 4, 2005 | Lower Income | 6070 | Ebony Gonzalez | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Thursday, July 16, 2007 | Higher Income | 5349 | Jennifer Russell | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Tuesday, July 24, 2007 | Middle Income | 5351 | Chloe Garcia | Single |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Wednesday, August 10, 2005 | Middle Income | 6064 | Marc Martin | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Friday, October 5, 2007 | Middle Income | 5278 | Jesse Murphy | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Wednesday, July 18, 2007 | Higher Income | 5357 | Amanda Carter | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Wednesday, July 25, 2007 | Higher Income | 5350 | Megan Sanchez | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Saturday, November 9, 2007 | Higher Income | 5243 | Nathan Simmons | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Friday, October 12, 2007 | Middle Income | 5271 | Leonard Nara | Single |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Tuesday, August 9, 2005 | Middle Income | 6065 | Christine Yuan | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 0 | 2 | Saturday, August 6, 2005 | Middle Income | 6068 | Jaclyn Lu | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Saturday, August 13, 2005 | Middle Income | 6061 | Jeremy Powell | Married |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Monday, September 10, 2007 | Middle Income | 5309 | Carol Rai | Single |
| sc + 2 | Skilled Manual | Obrero especializado | Technicien | 1 | 2 | Tuesday, August 23, 2005 | Middle Income | 6051 | Alan Zheng | Married |

12. In the **Data** pane, right-click **DimProductSubcategory**, and then click **New column**.

13. In the formula bar, highlight **Column =**, type the following script, and then press Enter:

```
MainCategory = RELATED(DimProductCategory[CategoryName])
```

14. In the **Data** pane, right-click **DimPromotion**, and then click **New column**.

15. In the formula bar, highlight **Column =**, type the following script, and then press Enter:

```
PromotionLengthDays = DATEDIFF(DimPromotion[StartDate], DimPromotion[EndDate], DAY)
```

16. In the **Data** pane, right-click **FactInternetSales**, and then click **New column**.

17. In the formula bar, highlight **Column =**, type the following script, and then press Enter:

```
Profit = CURRENCY(FactInternetSales[UnitPrice] - FactInternetSales[ProductStandardCost])
```

18. Close Power BI Desktop, saving any changes.