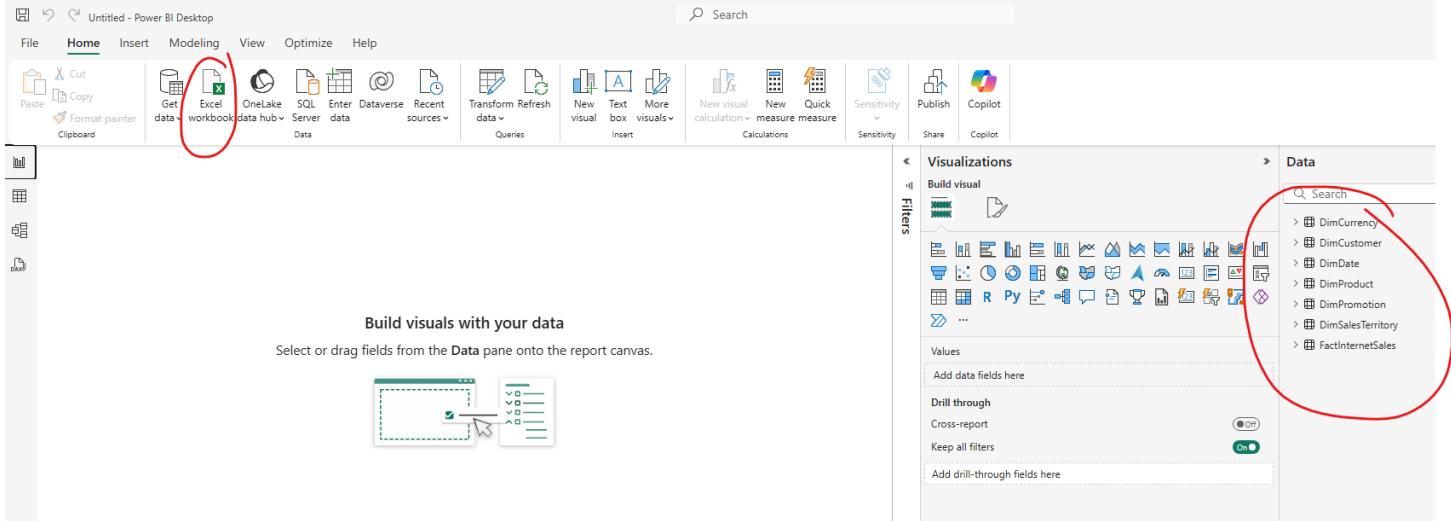
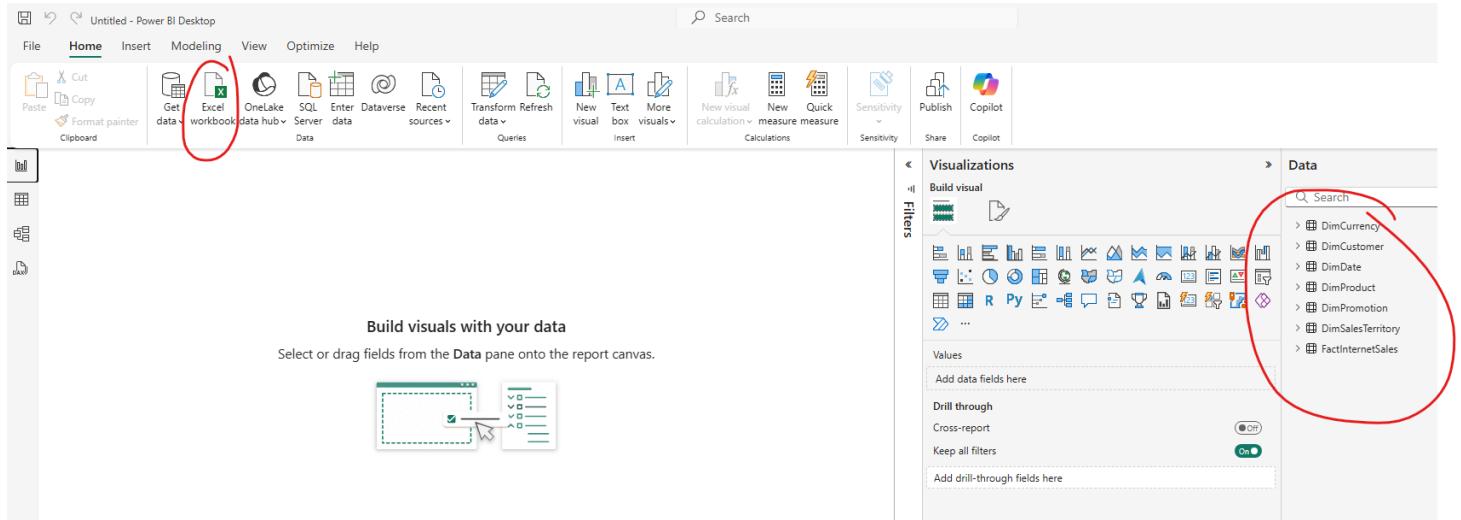


You have been asked to:

- a) In Power BI Desktop, connect to AdventureWorks Sales Data.xlsx.



- b) Import DimCurrency, DimCustomer, DimDate, DimProduct, DimPromotion, DimSalesTerritory, and FactInternetSales worksheets.



- c) Create a new relationship between the FactInternetSales table's OrderDateKey column and the DateKey column in DimDate. Set the cardinality

as Many to One (*:1), the cross-filter direction as Single, and make this relationship Active.

The screenshot shows the Power BI Data Model view with the "New relationship" dialog open. The "From table" dropdown is set to "FactInternetSales". The "To table" dropdown is set to "DimDate". A relationship is being established between the "OrderDateKey" column in FactInternetSales and the "DateKey" column in DimDate. The cardinality is set to "Many to one (*:1)". The cross-filter direction is set to "Single". The "Make this relationship active" checkbox is checked. The "Save" button is highlighted with a red circle.

New relationship

Select tables and columns that are related.

From table
FactInternetSales

| DateKey | ExtendedAmount | Freight | OrderDate | OrderDateKey | OrderQuantity | ProductKey |
|----------|----------------|---------|--------------------|--------------|---------------|------------|
| 20050714 | 3578.27 | 89.4568 | Saturday, July ... | 20050702 | 1 | 310 |
| 20050715 | 3578.27 | 89.4568 | Sunday, July ... | 20050703 | 1 | 313 |
| 20050715 | 3578.27 | 89.4568 | Sunday, July ... | 20050703 | 1 | 314 |

To table
DimDate

| CalendarQuarter | CalendarSemester | CalendarYear | DateKey | DayNumberOfMonth | DayNumberOfYear | DayNumberOfWeek |
|-----------------|------------------|--------------|----------|------------------|-----------------|-----------------|
| 3 | 2 | 2005 | 20050701 | 1 | 6 | 182 |
| 3 | 2 | 2005 | 20050702 | 2 | 7 | 183 |
| 3 | 2 | 2005 | 20050703 | 3 | 1 | 184 |

Cardinality
Many to one (*:1)

Cross-filter direction
Single

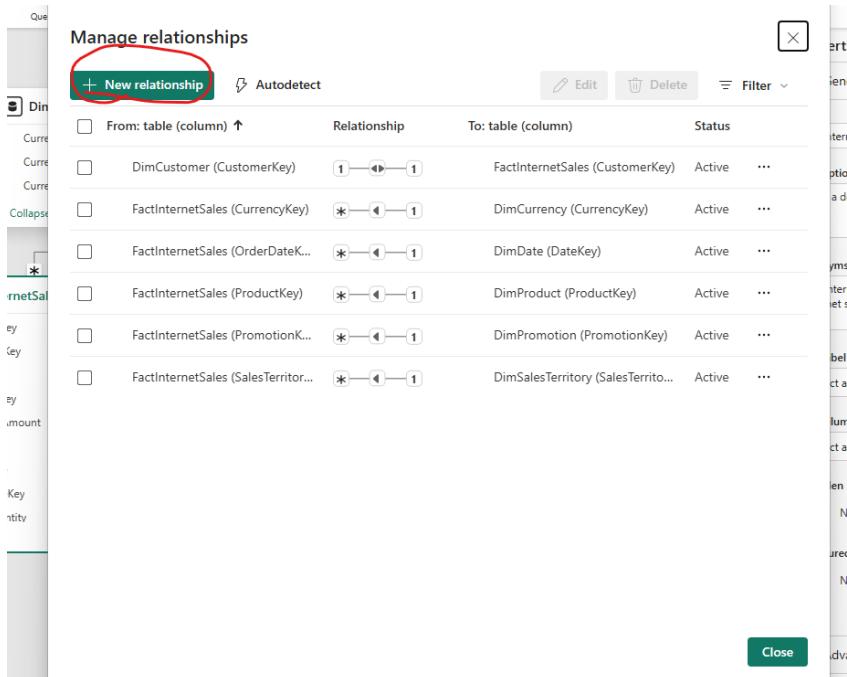
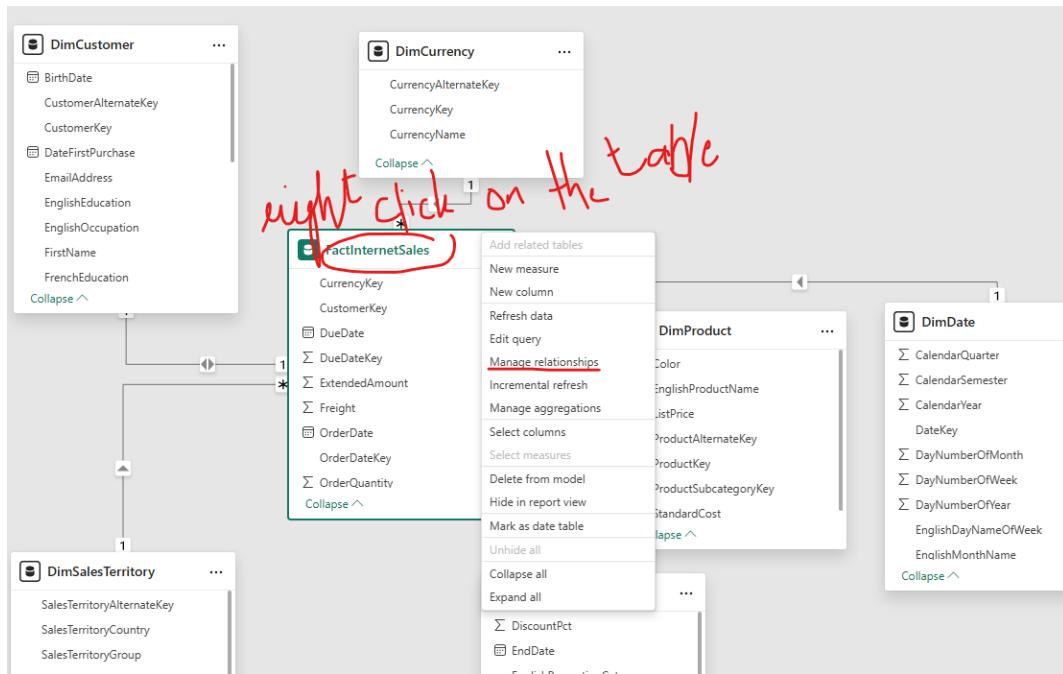
Make this relationship active

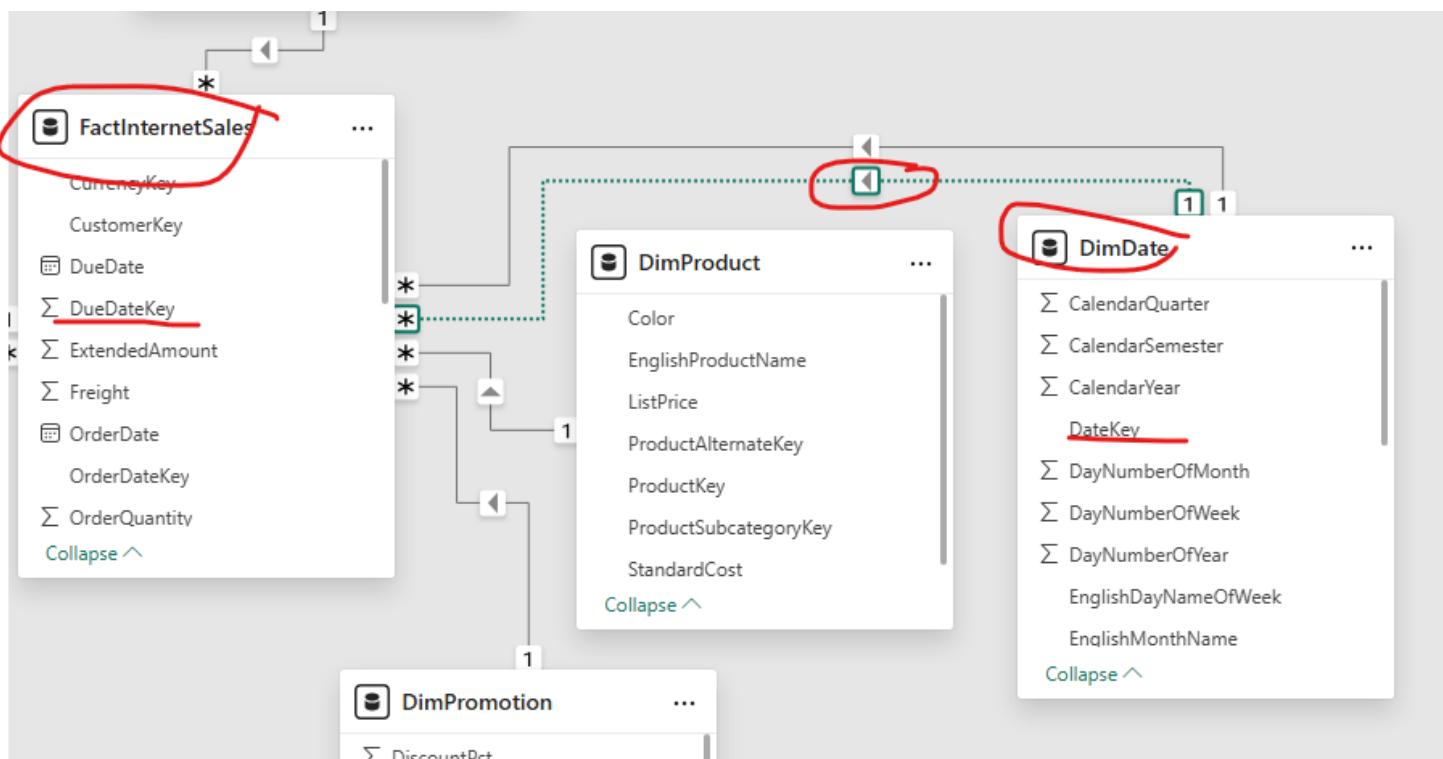
Apply security filter in both directions

Assume referential integrity

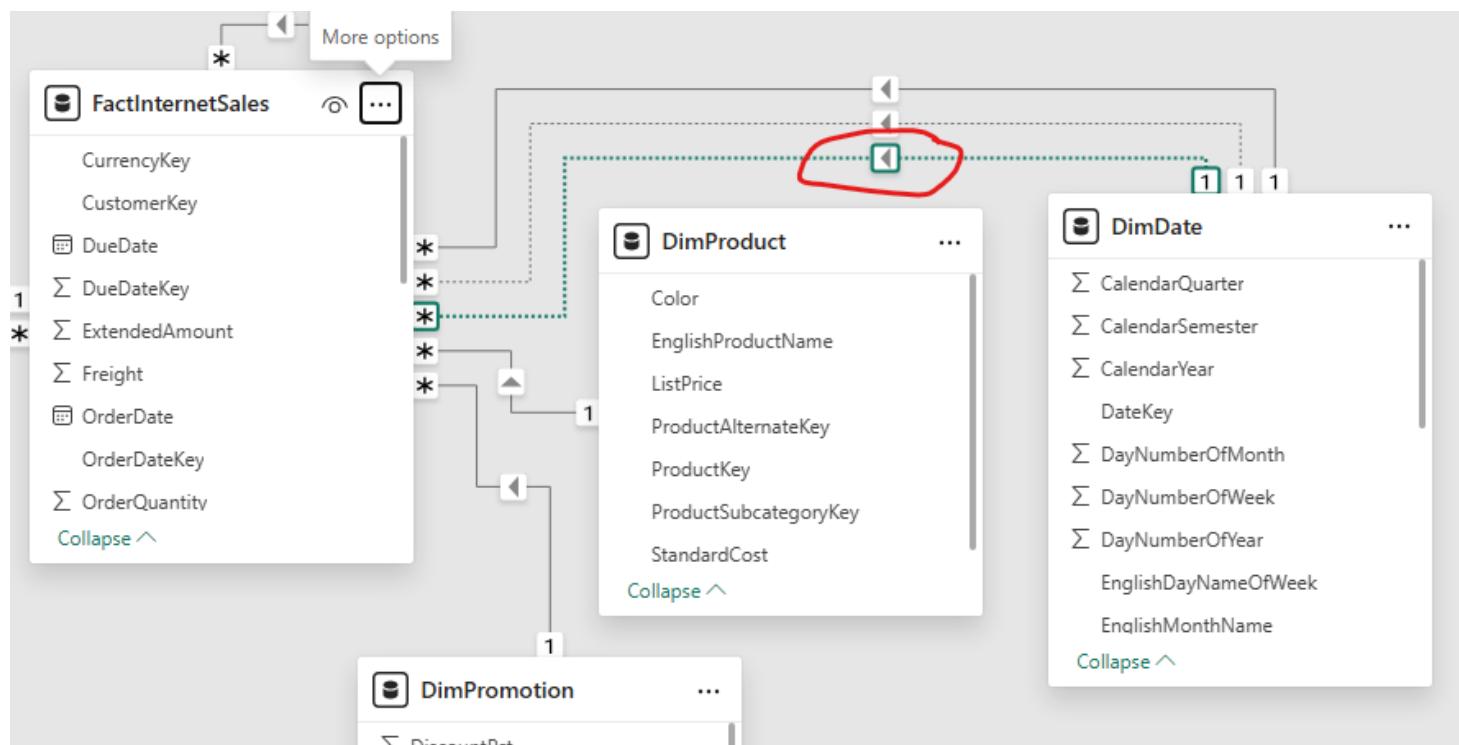
Save **Cancel**

d) Create a relationship from FactInternetSales [DueDateKey] to DimDate [DateKey].





e) Create a relationship between FactInternetSales [ShipDateKey] and DimDate [DateKey].



- f) In Power BI Desktop, load the DimProductCategory and DimProductSubcategory data from the AdventureWorks Product Categories.xlsx file.

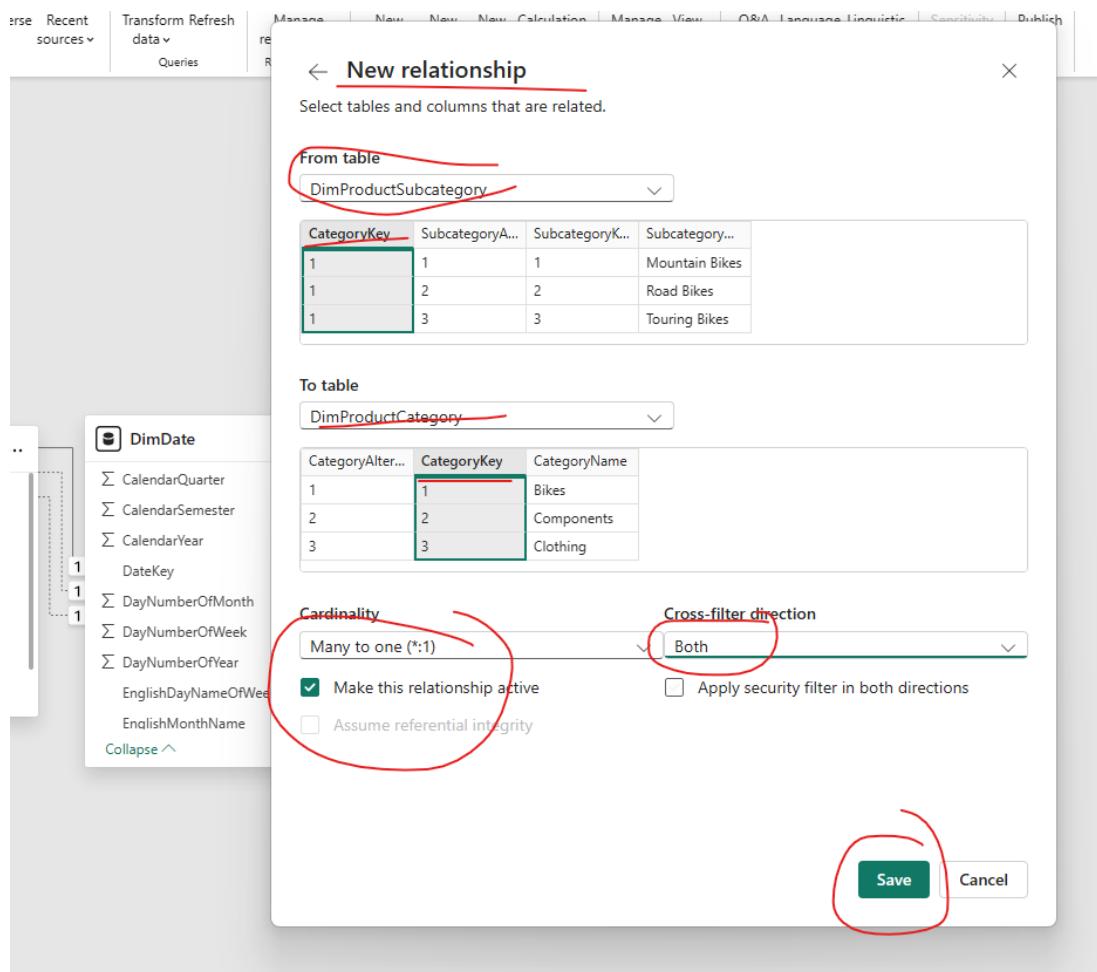
Navigator

The screenshot shows the Power BI Desktop Navigator interface. On the left, a tree view displays the file 'Adventure Works Product Categories.xlsx [4]' with two tables: 'Table1' and 'Table2'. Below them, 'DimProductCategory' and 'DimProductSubcategory' are listed with checked checkboxes. A red circle highlights these two items. On the right, a preview pane titled 'DimProductCategory' shows a table with three columns: 'CategoryKey', 'CategoryAlternateKey', and 'CategoryName'. The data rows are: 1 Bikes, 2 Components, 3 Clothing, and 4 Accessories. At the bottom right of the preview pane, there are three buttons: 'Load' (highlighted with a red circle), 'Transform Data', and 'Cancel'.

- g) Delete the relationship between DimProductCategory and DimProductSubcategory.

The screenshot shows the Power BI Data Model view. Two tables are visible: 'DimProductSubcategory' on the left and 'DimProductCategory' on the right. A relationship line connects the two tables. A context menu is open over this relationship, with the 'Delete' option highlighted with a red line. Other options in the menu include 'Properties' and 'Collapse ^'.

- h) Create a Many to One (*:1) between DimProductSubcategory [CategoryKey] and DimProductCategory [CategoryKey] and make the cross-filter direction to both.



- i) Create a Many to One (*:1) between DimProduct [ProductSubcategoryKey] and DimProductSubcategory [SubcategoryKey] and make the cross-filter direction to both

Manage relationships



| <input type="checkbox"/> From: table (column) ↑ | Relationship | To: table (column) | Status | ... |
|--|--------------|------------------------------------|----------|-----|
| <input type="checkbox"/> DimCustomer (CustomerKey) | 1 — 1 | FactInternetSales (CustomerKey) | Active | ... |
| <input type="checkbox"/> DimProduct (ProductSubcateg...) | * — 1 | DimProductSubcategory (Subc... | Active | ... |
| <input type="checkbox"/> DimProductSubcategory (Cate... | * — 1 | DimProductCategory (Categor... | Active | ... |
| <input type="checkbox"/> FactInternetSales (CurrencyKey) | * — 1 | DimCurrency (CurrencyKey) | Active | ... |
| <input type="checkbox"/> ∑ FactInternetSales (DueDateKey) | * — 1 | DimDate (DateKey) | Inactive | ... |
| <input type="checkbox"/> FactInternetSales (OrderDateK... | * — 1 | DimDate (DateKey) | Active | ... |
| <input type="checkbox"/> FactInternetSales (ProductKey) | * — 1 | DimProduct (ProductKey) | Active | ... |
| <input type="checkbox"/> FactInternetSales (PromotionK... | * — 1 | DimPromotion (PromotionKey) | Active | ... |
| <input type="checkbox"/> FactInternetSales (SalesTerritor... | * — 1 | DimSalesTerritory (SalesTerrito... | Active | ... |

j) Add a calculated column named IncomeStatus to the DimCustomer table based on the Yearly Income column. Income should be classified as follows:

- ❑ Lower than 25,000: Lower Income
- ❑ Between 25,000 and 60,000: Middle Income
- ❑ Between 60,000 and 100,000: Higher Income
- ❑ 100,000 and upward: Very High Income.

Dax Query:

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

Untitled - Power BI Desktop

File Home Help Table tools Column tools

Name IncomeStatus Format Text Summarization Don't summarize Sort by column Data category Uncategorized Data groups Manage relationships New column

```

1 IncomeStatus = IF(
2   DimCustomer[YearlyIncome] < 25000, "Lower Income",
3   IF(
4     DimCustomer[YearlyIncome] >= 25000 & DimCustomer[YearlyIncome] <= 60000, "Middle Income",
5     IF(
6       DimCustomer[YearlyIncome] > 60000 & DimCustomer[YearlyIncome] < 100000, "Higher Income",
7       "Very High Income"
8     )
9   )
10 )

```

| Children | NumberChildrenAtHome | EnglishEducation | SpanishEducation | FrenchEducation | EnglishOccupation | SpanishOccupation | FrenchOccupation | HouseOwnerFlag | NumberCarsOwned | DateFirstPurchase | IncomeStatus |
|----------|----------------------|---------------------|------------------------------------|-----------------|-------------------|----------------------|------------------|----------------|-----------------|-----------------------------|------------------|
| 2 | 0 | Bachelors | Licenciatura | Bac + 4 | Management | Gestión | Direction | 1 | 2 | Monday, September 17, 2007 | Very High Income |
| 4 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, July 15, 2005 | Lower Income |
| 2 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, July 20, 2005 | Middle Income |
| 0 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Thursday, August 16, 2007 | Middle Income |
| 0 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Monday, July 2, 2007 | Middle Income |
| 0 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Saturday, December 29, 2007 | Middle Income |
| 2 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 0 | 2 | Tuesday, July 26, 2005 | Middle Income |
| 2 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Tuesday, July 19, 2005 | Middle Income |
| 2 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 29, 2005 | Middle Income |
| 2 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 22, 2005 | Middle Income |
| 4 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 4, 2005 | Lower Income |
| 4 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Sunday, August 21, 2005 | Lower Income |
| 4 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 18, 2005 | Lower Income |
| 4 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 4, 2005 | Lower Income |
| 0 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, July 26, 2007 | Middle Income |
| 0 | 0 | Partial High School | Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 0 | 2 | Tuesday, July 24, 2007 | Middle Income |
| 3 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, August 10, 2005 | Middle Income |
| 0 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, October 5, 2007 | Middle Income |
| 0 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Wednesday, July 18, 2007 | Middle Income |
| 0 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Wednesday, July 25, 2007 | Higher Income |
| 0 | 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, November 9, 2007 | Middle Income |
| 3 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Friday, October 12, 2007 | Middle Income |
| 3 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Tuesday, August 9, 2005 | Middle Income |
| 3 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Saturday, August 6, 2005 | Middle Income |
| 3 | 0 | Partial High School | Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 1 | 2 | Saturday, August 13, 2005 | Middle Income |
| 3 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Monday, September 10, 2007 | Middle Income |
| 3 | 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Tuesday, August 23, 2005 | Middle Income |

- j) Add a calculated column named DaysSinceFirstPurchase to the DimCustomer table to show the number of days since a customer made the first purchase.

Dax Query: DaysSinceFirstPurchase =

DATEDIFF(DimCustomer[DateFirstPurchase],TODAY(),DAY)

Untitled - Power BI Desktop

Home Help Table tools Column tools

Name DaysSinceFirstPur... Format Whole number Summarization Sum Sort by column Data category Uncategorized Data groups Manage relationships New column

```

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

```

| Home | EnglishEducation | SpanishEducation | FrenchEducation | EnglishOccupation | SpanishOccupation | FrenchOccupation | HouseOwnerFlag | NumberCarsOwned | DateFirstPurchase | IncomeStatus | DaysSinceFirstPurchase |
|------|---------------------|------------------------------------|-----------------|-------------------|----------------------|------------------|----------------|-----------------|-----------------------------|------------------|------------------------|
| 0 | Bachelors | Licenciatura | Bac + 4 | Management | Gestión | Direction | 1 | 2 | Monday, September 17, 2007 | Very High Income | 6542 |
| 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, July 15, 2005 | Lower Income | 7336 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, July 20, 2005 | Middle Income | 7331 |
| 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Thursday, August 16, 2007 | Middle Income | 6574 |
| 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Monday, July 2, 2007 | Middle Income | 6619 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Saturday, December 29, 2007 | Middle Income | 6439 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Tuesday, July 26, 2005 | Middle Income | 7325 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Tuesday, July 19, 2005 | Middle Income | 7332 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 29, 2005 | Middle Income | 7322 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 22, 2005 | Middle Income | 7329 |
| 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 4, 2005 | Lower Income | 7316 |
| 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Sunday, August 21, 2005 | Lower Income | 7299 |
| 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 18, 2005 | Lower Income | 7302 |
| 0 | High School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 4, 2005 | Lower Income | 7316 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, July 26, 2007 | Middle Income | 6595 |
| 0 | Partial High School | Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 0 | 2 | Tuesday, July 24, 2007 | Middle Income | 6597 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Wednesday, August 10, 2005 | Middle Income | 7310 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, October 5, 2007 | Middle Income | 6524 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Wednesday, July 18, 2007 | Middle Income | 6603 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Wednesday, July 25, 2007 | Higher Income | 6596 |
| 0 | Partial College | Estudios universitarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, November 9, 2007 | Middle Income | 6300 |

- k) Add a calculated column named FullName to DimCustomer, which concatenates the FirstName and the LastName.

Dax Query: Full Name = DimCustomer[FirstName] & " " & DimCustomer[LastName]

| Name | Full Name | Format | Text | Summarization | Don't summarize | Sort by column | Data groups | Manage relationships | New column | Calculations |
|------------------|--|-----------------|-------------------|----------------------|------------------|----------------|-----------------|-----------------------------|------------------|------------------------|
| 1 | 1 Full Name = DimCustomer[FirstName] & " " & DimCustomer[LastName] | \$% | Format Text | Σ Summarization | Don't summarize | Sort by column | Data groups | Manage relationships | New column | Calculations |
| Structure | | | | | | | | | | |
| SpanishEducation | SpanishEducation | FrenchEducation | EnglishOccupation | SpanishOccupation | FrenchOccupation | HouseOwnerFlag | NumberCarsOwned | DateFirstPurchase | IncomeStatus | DaysSinceFirstPurchase |
| h School | Licenciatura | Bac + 4 | Management | Gestión | Direction | 1 | 2 | Monday, September 17, 2007 | Very High Income | 6542 Lauren Walker |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, July 15, 2005 | Lower Income | 7336 Shannon Wang |
| ial College | Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, July 20, 2005 | Middle Income | 7331 Clarence Rai |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Thursday, August 16, 2007 | Middle Income | 6574 Luke Lal |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Monday, July 2, 2007 | Middle Income | 6619 Jordan King |
| ial College | Estudios universitarios (en curso) | Baccauléat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Saturday, December 29, 2007 | Middle Income | 6429 Russell Xie |
| ial College | Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 0 | 2 | Tuesday, July 26, 2005 | Middle Income | 7325 Harold Sai |
| ial College | Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 1 | 2 | Tuesday, July 19, 2005 | Middle Income | 7332 Jessie Zhao |
| ial College | Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 29, 2005 | Middle Income | 7322 Jill Jimenez |
| ial College | Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 22, 2005 | Middle Income | 7329 Jimmy Moreno |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 4, 2005 | Lower Income | 7316 Theresa Ramos |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Sunday, August 21, 2005 | Lower Income | 7299 Denise Stone |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 18, 2005 | Lower Income | 7302 Jaime Nath |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 4, 2005 | Lower Income | 7316 Ebony Gonzalez |
| ial College | Estudios universitarios (en curso) | Baccauléat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, July 26, 2007 | Middle Income | 6595 Jennifer Russell |
| ial High School | Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 0 | 2 | Tuesday, July 24, 2007 | Middle Income | 6597 Chloe Garcia |
| ial College | Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, August 10, 2005 | Middle Income | 7310 Marc Martin |
| ial College | Estudios universitarios (en curso) | Baccauléat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, October 5, 2007 | Middle Income | 6524 Jesse Murphy |
| ial College | Estudios universitarios (en curso) | Baccauléat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Wednesday, July 18, 2007 | Middle Income | 6603 Amanda Carter |
| ial College | Estudios universitarios (en curso) | Baccauléat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Wednesday, July 23, 2007 | Higher Income | 6596 Megan Sanchez |
| ial College | Estudios universitarios (en curso) | Baccauléat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, November 9, 2007 | Middle Income | 6489 Nathan Simmons |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Friday, October 12, 2007 | Middle Income | 6517 Leonard Nara |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Tuesday, August 9, 2005 | Middle Income | 7311 Christine Yuan |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Saturday, August 6, 2005 | Middle Income | 7314 Jaclyn Lu |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Saturday, August 13, 2005 | Middle Income | 7307 Jeremy Powell |
| ial High School | Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 1 | 2 | Monday, September 10, 2007 | Middle Income | 6549 Carol Rai |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Tuesday, August 23, 2005 | Middle Income | 7297 Alan Zheng |
| h School | Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Tuesday, July 1, 2008 | Middle Income | 6254 Daniel Johnson |
| ial College | Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 0 | 2 | Saturday, August 20, 2005 | Middle Income | 7300 Heidi Lopez |
| ial College | Estudios universitarios (en curso) | Baccauléat | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Saturday, July 21, 2007 | Middle Income | 6600 Ana Price |
| ial College | Estudios universitarios (en curso) | Baccauléat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Saturday, August 6, 2005 | Middle Income | 7314 Deanna Munoz |

- l) Add a calculated column named MaleFemale to DimCustomer, which converts the values of the Gender column to Male or Female.

Dax Query: MaleFemale = IF(DimCustomer[Gender] = "M", "Male", IF(DimCustomer[Gender] = "F", "Female", "Other"))

| Name | MaleFemale | Format | Text | Summarization | Don't summarize | Sort by column | Data groups | Manage relationships | New column | Calculations |
|------------------------------------|--|-----------------|----------------------|------------------|-----------------|-----------------|-----------------------------|----------------------|------------------------|--------------|
| 1 | 1 MaleFemale = IF(DimCustomer[Gender] = "M", "Male", IF(DimCustomer[Gender] = "F", "Female", "Other")) | \$% | Format Text | Σ Summarization | Don't summarize | Sort by column | Data groups | Manage relationships | New column | Calculations |
| Structure | | | | | | | | | | |
| SpanishEducation | SpanishEducation | FrenchEducation | EnglishOccupation | FrenchOccupation | HouseOwnerFlag | NumberCarsOwned | DateFirstPurchase | IncomeStatus | DaysSinceFirstPurchase | Full Name |
| Licenciatura | Bac + 4 | Management | Gestión | Direction | 1 | 2 | Monday, September 17, 2007 | Very High Income | 6542 Lauren Walker | Female |
| Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Friday, July 15, 2005 | Lower Income | 7336 Shannon Wang | Female |
| Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, July 20, 2005 | Middle Income | 7331 Clarence Rai | Male |
| Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Thursday, August 16, 2007 | Middle Income | 6574 Luke Lal | Male |
| Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 0 | 2 | Monday, July 2, 2007 | Middle Income | 6619 Jordan King | Male |
| Estudios universitarios (en curso) | Baccauléat | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Saturday, December 29, 2007 | Middle Income | 6429 Russell Xie | Male |
| Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 0 | 2 | Tuesday, July 26, 2005 | Middle Income | 7325 Harold Sai | Male |
| Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 1 | 2 | Tuesday, July 18, 2005 | Middle Income | 7332 Jessie Zhao | Male |
| Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 29, 2005 | Middle Income | 7322 Jill Jimenez | Female |
| Estudios universitarios (en curso) | Baccauléat | Clerical | Administrativo | Employé | 1 | 2 | Friday, July 22, 2005 | Middle Income | 7329 Jimmy Moreno | Male |
| Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 4, 2005 | Lower Income | 7316 Theresa Ramos | Female |
| Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Sunday, August 21, 2005 | Lower Income | 7299 Denise Stone | Female |
| Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 18, 2005 | Lower Income | 7302 Jaime Nath | Male |
| Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, August 4, 2005 | Lower Income | 7316 Ebony Gonzalez | Female |
| Educación secundaria | Bac + 2 | Skilled Manual | Obrero especializado | Técnico | 1 | 2 | Thursday, July 26, 2007 | Middle Income | 6595 Jennifer Russell | Female |
| Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 0 | 2 | Tuesday, July 24, 2007 | Middle Income | 6597 Chloe Garcia | Female |
| Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, August 10, 2005 | Middle Income | 7310 Marc Martin | Male |
| Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 1 | 2 | Friday, October 5, 2007 | Middle Income | 6524 Jesse Murphy | Male |
| Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 1 | 2 | Wednesday, July 18, 2007 | Middle Income | 6603 Amanda Carter | Female |
| Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 1 | 2 | Friday, November 9, 2007 | Higher Income | 6599 Megan Sanchez | Female |
| Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 1 | 2 | Friday, October 12, 2007 | Middle Income | 6489 Nathan Simmons | Male |
| Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 0 | 2 | Friday, October 12, 2007 | Middle Income | 6517 Leonard Nara | Male |
| Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 1 | 2 | Tuesday, August 9, 2005 | Middle Income | 7311 Christine Yuan | Female |
| Educación secundaria (en curso) | Niveau bac | Clerical | Administrativo | Employé | 1 | 2 | Friday, November 9, 2007 | Middle Income | 7314 Deanna Munoz | Female |

m) Add a calculated column to DimCustomer, called Relationship, which converts the value of the MaritalStatus column to Married or Single.

Query: Relationship = IF(DimCustomer[MaritalStatus] = "M", "Married", "Single")

The screenshot shows the Power BI Desktop interface with the 'Column tools' ribbon selected. A calculated column named 'Relationship' has been created, defined by the formula: `Relationship = IF(DimCustomer[MaritalStatus] = "M", "Married", "Single")`. The 'Relationship' column is highlighted with a red oval. The table contains various columns such as 'Education', 'Occupation', 'HouseOwnerFlag', 'NumberCarsOwned', 'DateFirstPurchase', 'IncomeStatus', 'DaysSinceFirstPurchase', 'Full Name', 'MaleFemale', and the newly created 'Relationship' column.

| Education | FrenchEducation | EnglishOccupation | SpanishOccupation | FrenchOccupation | HouseOwnerFlag | NumberCarsOwned | DateFirstPurchase | IncomeStatus | DaysSinceFirstPurchase | Full Name | MaleFemale | Relationship |
|-------------------|-----------------|-------------------|----------------------|------------------|----------------|-----------------|-------------------------------|------------------|------------------------|------------------|------------|--------------|
| daria | Bac + 4 | Management | Gestion | Direction | | 1 | 2 Monday, September 17, 2007 | Very High Income | 6542 | Lauren Walker | Female | Married |
| daria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | | 1 | 2 Friday, July 15, 2005 | Lower Income | 7336 | Shannon Wang | Female | Single |
| tarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | | 1 | 2 Wednesday, July 20, 2005 | Middle Income | 7331 | Clarence Rai | Male | Single |
| daria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | | 0 | 2 Thursday, August 16, 2007 | Middle Income | 6574 | Luke Lal | Male | Single |
| daria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | | 0 | 2 Monday, July 2, 2007 | Middle Income | 6619 | Jordan King | Male | Single |
| tarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Technicien | | 1 | 2 Saturday, December 29, 2007 | Middle Income | 6439 | Russell Xie | Male | Married |
| tarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | | 0 | 2 Tuesday, July 26, 2005 | Middle Income | 7325 | Harold Sai | Male | Single |
| tarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | | 1 | 2 Tuesday, July 19, 2005 | Middle Income | 7332 | Jessie Zhao | Male | Married |
| tarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | | 1 | 2 Friday, July 29, 2005 | Middle Income | 7322 | Jill Jimenez | Female | Married |
| tarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | | 1 | 2 Friday, July 22, 2005 | Middle Income | 7329 | Jimmy Moreno | Male | Married |
| daria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | | 1 | 2 Thursday, August 4, 2005 | Lower Income | 7316 | Theresa Ramos | Female | Married |
| daria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | | 1 | 2 Sunday, August 21, 2005 | Lower Income | 7299 | Denise Stone | Female | Married |
| daria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | | 1 | 2 Thursday, August 18, 2005 | Lower Income | 7302 | Jaime Nath | Male | Married |
| daria | Bac + 2 | Skilled Manual | Obrero especializado | Technicien | | 1 | 2 Thursday, August 4, 2005 | Lower Income | 7316 | Ebony Gonzalez | Female | Married |
| tarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Technicien | | 1 | 2 Thursday, July 26, 2007 | Middle Income | 6595 | Jennifer Russell | Female | Married |
| daria (en curso) | Niveau bac | Clerical | Administrativo | Employé | | 0 | 2 Tuesday, July 24, 2007 | Middle Income | 6597 | Chloe Garcia | Female | Single |
| tarios (en curso) | Baccalauréat | Clerical | Administrativo | Employé | | 1 | 2 Wednesday, August 10, 2005 | Middle Income | 7310 | Marc Martin | Male | Married |
| tarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Technicien | | 1 | 2 Friday, October 5, 2007 | Middle Income | 6524 | Jesse Murphy | Male | Married |
| tarios (en curso) | Baccalauréat | Skilled Manual | Obrero especializado | Technicien | | 1 | 2 Wednesday, July 18, 2007 | Middle Income | 6603 | Amanda Carter | Female | Married |

n) Add a calculated column called MainCategory to the DimProductSubcategory table, which gets the category name from DimProductCategory.

Query:

MainCategory = RELATED(DimProductCategory[CategoryName])

The screenshot shows the Power BI Desktop interface with the 'Column tools' tab selected. A calculated column named 'MainCategory' is being created, with the formula `MainCategory = RELATED(DimProductCategory[CategoryName])`. The table 'DimProductSubcategory' has 37 rows and 5 columns: SubcategoryKey, SubcategoryAlternateKey, Sub categoryName, CategoryKey, and MainCategory. The 'MainCategory' column contains values such as 'Bikes', 'Components', 'Clothing', and 'Accessories', corresponding to the categories in the DimProductCategory table.

| SubcategoryKey | SubcategoryAlternateKey | Sub categoryName | CategoryKey | MainCategory |
|----------------|-------------------------|----------------------|-------------|--------------|
| 1 | | 1 Mountain Bikes | 1 | Bikes |
| 2 | | 2 Road Bikes | 1 | Bikes |
| 3 | | 3 Touring Bikes | 1 | Bikes |
| 4 | | 4 Handlebars | 2 | Components |
| 5 | | 5 Bottom Brackets | 2 | Components |
| 6 | | 6 Brakes | 2 | Components |
| 7 | | 7 Chains | 2 | Components |
| 8 | | 8 Cranksets | 2 | Components |
| 9 | | 9 Derailleurs | 2 | Components |
| 10 | | 10 Forks | 2 | Components |
| 11 | | 11 Headsets | 2 | Components |
| 12 | | 12 Mountain Frames | 2 | Components |
| 13 | | 13 Pedals | 2 | Components |
| 14 | | 14 Road Frames | 2 | Components |
| 15 | | 15 Saddles | 2 | Components |
| 16 | | 16 Touring Frames | 2 | Components |
| 17 | | 17 Wheels | 2 | Components |
| 18 | | 18 Bib-Shorts | 3 | Clothing |
| 19 | | 19 Caps | 3 | Clothing |
| 20 | | 20 Gloves | 3 | Clothing |
| 21 | | 21 Jerseys | 3 | Clothing |
| 22 | | 22 Shorts | 3 | Clothing |
| 23 | | 23 Socks | 3 | Clothing |
| 24 | | 24 Tights | 3 | Clothing |
| 25 | | 25 Vests | 3 | Clothing |
| 26 | | 26 Bike Racks | 4 | Accessories |
| 27 | | 27 Bike Stands | 4 | Accessories |
| 28 | | 28 Bottles and Cages | 4 | Accessories |
| 29 | | 29 Cleaners | 4 | Accessories |
| 30 | | 30 Fenders | 4 | Accessories |
| 31 | | 31 Helmets | 4 | Accessories |
| 32 | | 32 Hydration Packs | 4 | Accessories |
| 33 | | 33 Lights | 4 | Accessories |
| 34 | | 34 Locks | 4 | Accessories |
| 35 | | 35 Panniers | 4 | Accessories |
| 36 | | 36 Pumps | 4 | Accessories |

Table: DimProductSubcategory (37 rows) Column: MainCategory (4 distinct values)

- o) Add a calculated column called PromotionLengthDays to the DimPromotion table, which is the difference between StartDate and EndDate.

Query: PromotionLengthDays

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

| Structure | Formatting | Properties | | Sort | Groups | Relationships | Calculations | | |
|-----------|-----------------------|---|-------------|--------------------------|----------------------------|------------------------------|--------------|--------|---------------------|
| | | PromotionLengthDays = DATEDIFF(DimPromotion[StartDate],DimPromotion[EndDate],DAY) | | | | | | | |
| InKey | PromotionAlternateKey | EnglishPromotionName | DiscountPct | EnglishPromotionCategory | StartDate | EndDate | MinQty | MaxQty | PromotionLengthDays |
| 1 | 1 | No Discount | 0 | No Discount | Wednesday, June 1, 2005 | Wednesday, December 31, 2008 | 0 | NULL | 1309 |
| 2 | 2 | Volume Discount 11 to 14 | 0.02 | Reseller | Friday, July 1, 2005 | Monday, June 30, 2008 | 11 | 14 | 1095 |
| 3 | 3 | Volume Discount 15 to 24 | 0.05 | Reseller | Friday, July 1, 2005 | Monday, June 30, 2008 | 15 | 24 | 1095 |
| 4 | 4 | Volume Discount 25 to 40 | 0.1 | Reseller | Friday, July 1, 2005 | Monday, June 30, 2008 | 25 | 40 | 1095 |
| 5 | 5 | Volume Discount 41 to 60 | 0.15 | Reseller | Friday, July 1, 2005 | Monday, June 30, 2008 | 41 | 60 | 1095 |
| 6 | 6 | Volume Discount over 60 | 0.2 | Reseller | Friday, July 1, 2005 | Monday, June 30, 2008 | 61 | NULL | 1095 |
| 7 | 7 | Mountain-100 Clearance Sale | 0.35 | Reseller | Monday, May 15, 2006 | Friday, June 30, 2006 | 0 | NULL | 46 |
| 8 | 8 | Sport Helmet Discount-2002 | 0.1 | Reseller | Saturday, July 1, 2006 | Monday, July 31, 2006 | 0 | NULL | 30 |
| 9 | 9 | Road-650 Overstock | 0.3 | Reseller | Saturday, July 1, 2006 | Thursday, August 31, 2006 | 0 | NULL | 61 |
| 10 | 10 | Mountain Tire Sale | 0.5 | Customer | Friday, June 15, 2007 | Thursday, August 30, 2007 | 0 | NULL | 76 |
| 11 | 11 | Sport Helmet Discount-2003 | 0.15 | Reseller | Sunday, July 1, 2007 | Tuesday, July 31, 2007 | 0 | NULL | 30 |
| 12 | 12 | LL Road Frame Sale | 0.35 | Reseller | Sunday, July 1, 2007 | Wednesday, August 15, 2007 | 0 | NULL | 45 |
| 13 | 13 | Touring-3000 Promotion | 0.15 | Reseller | Sunday, July 1, 2007 | Sunday, September 30, 2007 | 0 | NULL | 91 |
| 14 | 14 | Touring-1000 Promotion | 0.2 | Reseller | Sunday, July 1, 2007 | Sunday, September 30, 2007 | 0 | NULL | 91 |
| 15 | 15 | Half-Price Pedal Sale | 0.5 | Customer | Wednesday, August 15, 2007 | Saturday, September 15, 2007 | 0 | NULL | 31 |
| 16 | 16 | Mountain-500 Silver Clearance Sale | 0.4 | Reseller | Thursday, May 1, 2008 | Monday, June 30, 2008 | 0 | NULL | 60 |

- p) Add a calculated column called Profit to FactInternetSales, and show the difference between UnitPrice and ProductStandardCost formatted as currency.

Query: Profit = FactInternetSales[UnitPrice]-FactInternetSales[ProductStandardCost]

Untitled - Power BI Desktop

Home Help Table tools Column tools

Name Profit Format Currency Summation Sum Data type Decimal number \$ % .00 Auto

Structure Formatting Properties

Sort by column Sort Data groups Groups Manage relationships Relationships New column Calculations

X ✓ 1 Profit = FactInternetSales[UnitPrice]-FactInternetSales[ProductStandardCost]

| LineNumber | RevisionNumber | OrderQuantity | UnitPrice | ExtendedAmount | ProductStandardCost | TotalProductCost | SalesAmount | TaxAmt | Freight | OrderDate | DueDate | ShipDate | Profit |
|------------|----------------|---------------|-----------|----------------|---------------------|------------------|-------------|----------|---------|--------------------------|--------------------------|--------------------------|--------------|
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Saturday, July 2, 2005 | Thursday, July 14, 2005 | Saturday, July 9, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Sunday, July 3, 2005 | Friday, July 15, 2005 | Sunday, July 10, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Sunday, July 3, 2005 | Friday, July 15, 2005 | Sunday, July 10, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Tuesday, July 5, 2005 | Sunday, July 17, 2005 | Tuesday, July 12, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Tuesday, July 5, 2005 | Sunday, July 17, 2005 | Tuesday, July 12, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Thursday, July 7, 2005 | Tuesday, July 19, 2005 | Thursday, July 14, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Friday, July 8, 2005 | Wednesday, July 20, 2005 | Friday, July 15, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Saturday, July 9, 2005 | Thursday, July 21, 2005 | Saturday, July 16, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Sunday, July 10, 2005 | Friday, July 22, 2005 | Sunday, July 17, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Monday, July 11, 2005 | Saturday, July 23, 2005 | Monday, July 18, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Tuesday, July 12, 2005 | Sunday, July 24, 2005 | Tuesday, July 19, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Wednesday, July 13, 2005 | Monday, July 25, 2005 | Wednesday, July 20, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Thursday, July 14, 2005 | Tuesday, July 26, 2005 | Thursday, July 21, 2005 | \$1,406.9758 |
| 1 | 1 | 1 | 3578.27 | 3578.27 | 2171.2942 | 2171.2942 | 3578.27 | 286.2616 | 89.4568 | Saturday, July 16, 2005 | Wednesday, July 23, 2005 | Saturday, July 20, 2005 | \$1,406.9758 |

- q) Save the changes, and close Power BI Desktop