

**PowerExcel Studio
Quick Start Manual**

PowerExcel

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POWEREXCEL

PowerExcel Studio Manual

T o p i c s

- Creating a PowerExcel Database
- Creating Dimensions and Defining Dimension Attributes
 - Creating a Cube
- Saving the PowerExcel Database
- Advanced Features: Cube Formulas, Security, Bookmarks
- Additional Topics (excerpted from the PowerExcel User Manual):
 - Creating a PowerExcel Slice
 - Entering Data in a PowerExcel Model

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Introduction to PowerExcel Studio

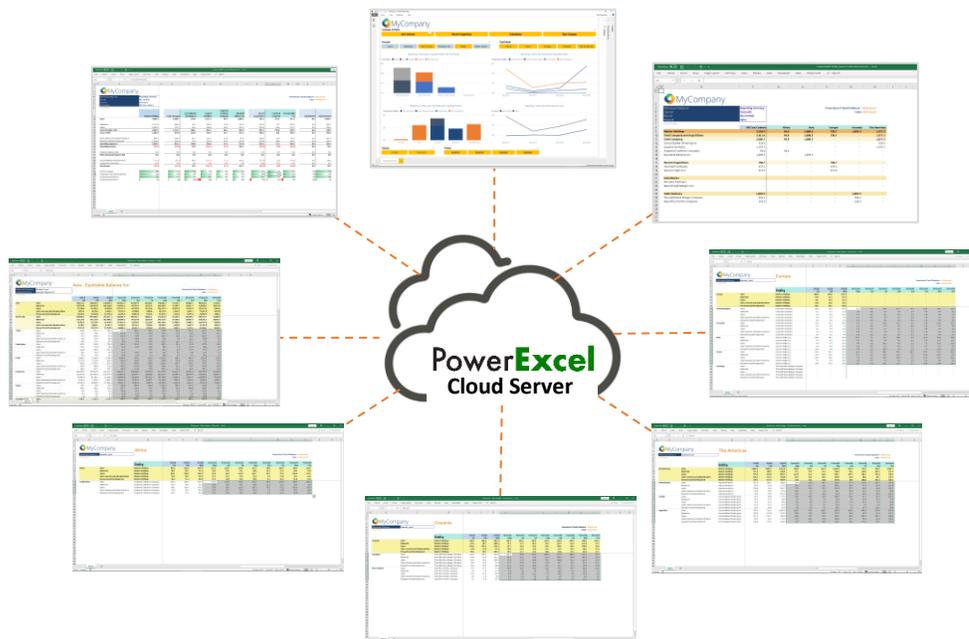
PowerExcel enables organizations to significantly streamline and speed up their Planning/Budgeting, Forecasting, and Reporting processes within Excel—any number of users can reach cloud-base financial models that serve as the central repository for data, business rules, and KPIs (calculated measures).

PowerExcel ensures accuracy of reports, plans, and forecasts; provides consistency of business rule/KPI definitions across all business units and guarantees the immediacy of all relevant business data.

Working from Excel on a shared, cloud-based model fosters real-time user collaboration, eliminating the need to email spreadsheets back and forth and avoiding the limitations of co-authoring a single (typically ever-expanding) spreadsheet model.

Note: this manual covers the basics of building a PowerExcel model using PowerExcel Studio. This requires an installation of PowerExcel Studio in a cloud environment—both the product and the cloud environment are provided by [PARIS Technologies, Inc.](#)

The following image shows the PowerExcel model created by PowerExcel Studio in the cloud server.



Any number of PowerExcel users may connect to the cloud server for collaborative planning, analysis and reporting

The following page shows how a user connects to the cloud server, via the PowerExcel Excel Add-in



A simple PowerExcel Add-in connects any spreadsheet user to the cloud-based model, where data, Key Performance Indicators and business rules are stored.

1. Manual Overview

This manual details a step-by-step procedure to create a PowerExcel database. Essentially this is a “multidimensional approach” to model building (for example, a financial model of a business), whereby we begin by creating the Dimensions and their corresponding Members and attributes, then build a Cube.

For this example, the objective is to build a *Sales* cube, which consists of 4 dimensions, namely: *Version*, *Account*, *Region* and *Month*. The *Version* dimension is included to demonstrate how this model can be used for “planning”—for example, a budgeting or sales forecasting exercise.

Specifically, the steps involved in creating this multidimensional model are:

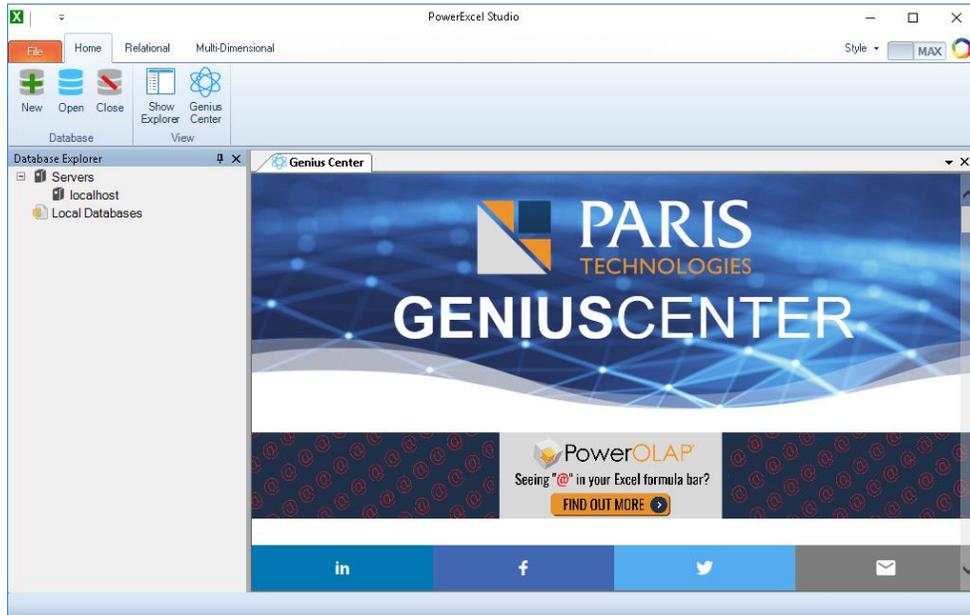
- Create a PowerExcel Database
- Create the Dimensions
 - Create the Members
 - Create the Dimension Attributes
 - Define Hierarchies
 - Create Dimension Weights
 - Create Aliases
 - Create Properties
 - Create Subsets
- Create a Cube
- Work with PowerExcel Advanced Features: Cube Formula, Security, Bookmarks
- Quick view of the data from a user’s standpoint, from a PowerExcel Slice.
- Quick example of populating the Cube with figures via data entry in a PowerExcel Slice

Important: The last two topics—concerning **Creating a PowerExcel Slice** and **Entering Data in a PowerExcel Model**—are covered fully in the **PowerExcel User Manual**.

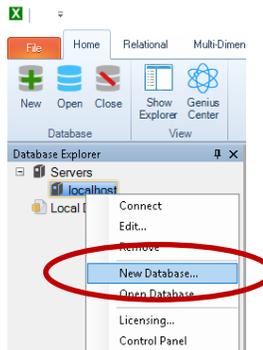
2. Creating a PowerExcel Database Model

2.1 Create a PowerExcel Database

1. To create a PowerExcel model, launch **PowerExcel Studio**.

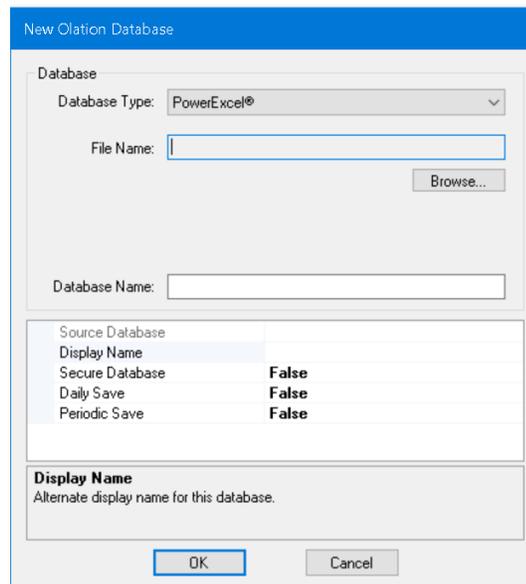


2. In the Database Explorer, expand on Servers, right-click on **localhost** (or the name of your Server) and select the **New Database** option.



The New Olation Database dialog appears (see following image).

Note: PowerExcel is a specific type of database that is created by the product Olation, from [PARIS Technologies](http://www.paristechnologies.com). Other databases types can be created through use of a separate license; these databases are more typically created from relational database sources, e.g., SQL Server or SAP HANA. The PowerExcel database type is a multidimensional database that can be saved as a local file, but available via a Server (as in this case) to multiple users for collaborative planning, analytics and reporting.



3. In the **Database Type** drop-down, **PowerExcel** will be the only option, per the Note above.
4. Click on **Browse** to locate a directory for your PowerExcel database and provide a <file name> for your database, e.g., **PowerExcel Planning Model 2020**.
5. You may change the Display Name seen by front end applications (e.g., PowerExcel) by typing a different <display name> in the **Display Name** field. [NOTE: Database Name textbox not operable in current version.]

For this exercise, the Display name is the same as the File Name, as below.



Note: You will see the newly created PowerExcel database appear as an item in the Database Explorer. Additionally, a PowerExcel database file will be created in the target destination directory and will have a **“.PowerXL”** extension name.

2.2 Dimensions for the PowerExcel Model

The next step is to create the Dimensions, component Members and other Dimension attributes, including Hierarchies, Aggregate Weights, Aliases, Properties, and Subsets.

For this example, we will be creating the following Dimensions:

Dimension Name: ACCOUNT
Sales
Cost of Sales
Gross Profit
Operating Expenses
Net Income

Dimension Name: VERSION
Actual
Budget
Variance

Dimension Name: REGION
United States
Canada
Mexico
Colombia
Venezuela
North America
South America

Dimension Name: MONTH
January
February
March
April
May
June
July
August
September
October
November
December
1 st Quarter
2 nd Quarter
3 rd Quarter
4 th Quarter

2.3 Create the First Dimension and Define Attributes – Account Dimension

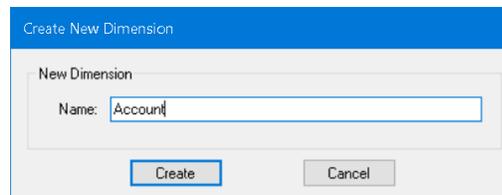
Note: Dimensions can be created in any order, and then can be arranged according to preference. The ultimate sequence of Dimensions will determine how they are arranged in a PowerExcel Slice.

1. Right click on **Dimensions** and select **New Dimension**.

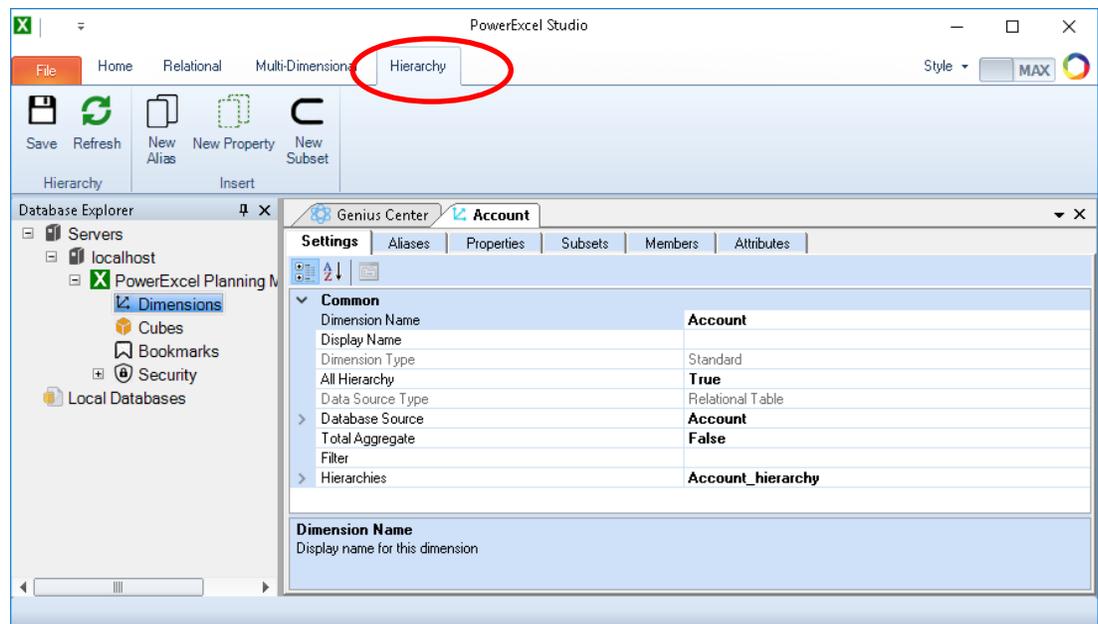
The Create New Dimension dialog appears:



- In the Create New Dimension dialog, enter the <name of the Dimension>, i.e., **Account**.



- Click **Create**. The Dimension Editing Window for the **Account** Dimension appears. This window is where you will define all the Members and other Attributes.



Important: Notice that a new tab appears on the PowerExcel Studio Ribbon, i.e., **Hierarchy Tab** (circled in the preceding image). This tab consists of commands for creating Dimensions and their corresponding Attributes, which will be discussed in subsequent steps.

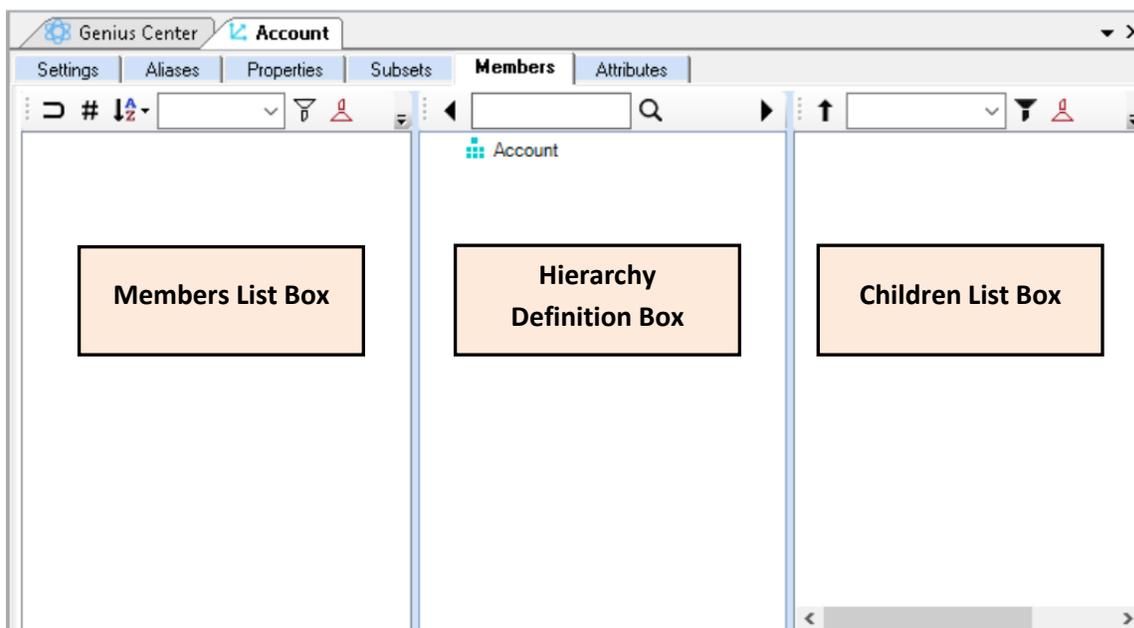
The Dimension Editing Window consists of 6 tabs: Settings, Aliases, Properties, Subsets, Members and Attributes. In the next few pages, we will be using most of them to give the Dimension the desired definition and attributes for this exercise.

2. Adding Members (*Account* Dimension):

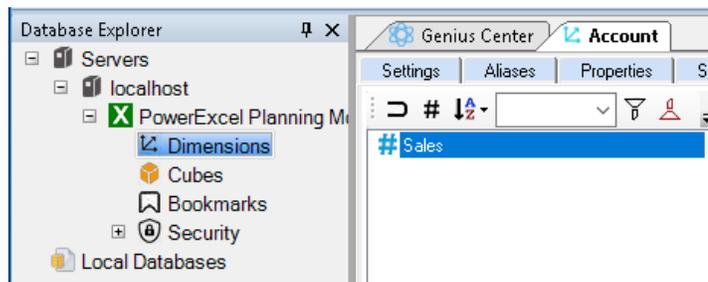
- Go to the **Members Tab** of the Dimension Editing Window.

Note: The Members Tab has 3 panes (as shown in the following image):

- **Members List box** – This is the left-hand pane, and it is where a user can add, delete, and rename a Members; a user can also arrange the order of Members.
- **Hierarchy Definition Box** – This is the middle pane and is where the user defines the hierarchy structure for the Dimension. This is also where users can define Aggregate Weights or Member Weights.
- **Children List Box** – This is the right-hand pane. When you click on any Member in the Hierarchy Definition box, this list box will display child members, if any exist, for the selected Member.

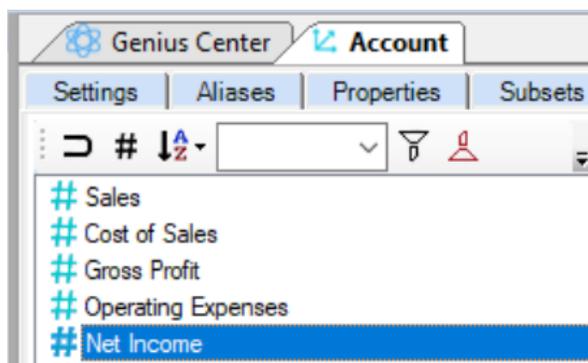


- In the left-hand pane (Members list box), click the **Add Member icon** (Hash symbol #). Alternatively, right-click and select **New Member**. (Note the other selections when you right-click: Rename Member, Delete Member, etc.)
- In the textbox that appears, type the <member name>--e.g., type **Sales** then press the **Enter** key.



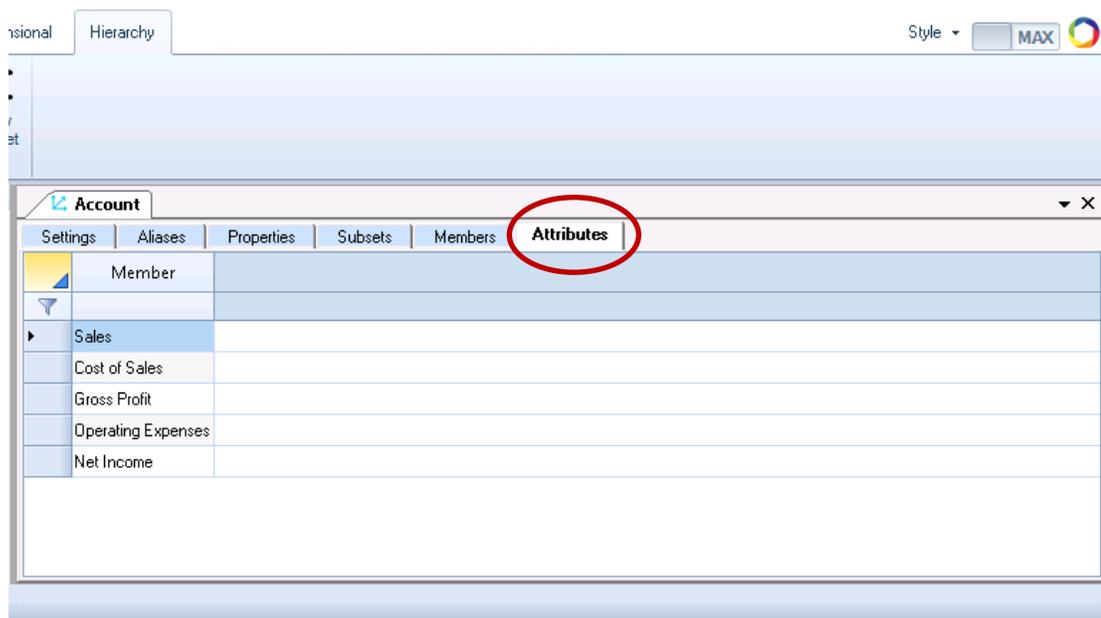
- Continue adding Members by clicking on the **Add Member icon** and typing the <member names> in the text box. Add the Members: **Cost of Sales, Gross Profit, Operating Expenses** and **Net Income**—the Members List box will eventually look like the following screen image.

Tip: Alternatively, while the text field is active, you can press the **Ctrl + Enter** key to create additional Members.



Note: You can re-arrange the order of your Members by dragging and dropping a Member above or below another.

When you go to the **Attributes Tab** (circled in the following image), you will see all the Members that have been added for the **Account** dimension.



3. **Define Hierarchy** (*Account* Dimension)

You can define a Hierarchy for a Dimension to manage aggregations, including the calculation of values, i.e., Child Member(s) rolling up to a Parent Member.

For the *Account* dimension, we will create Hierarchies whereby:

- *Sales* and *Cost of Sales* values roll up to the Parent Member *Gross Profit*.
- *Gross Profit* and *Operating Expenses* roll up to the Parent Member called *Net Income*.

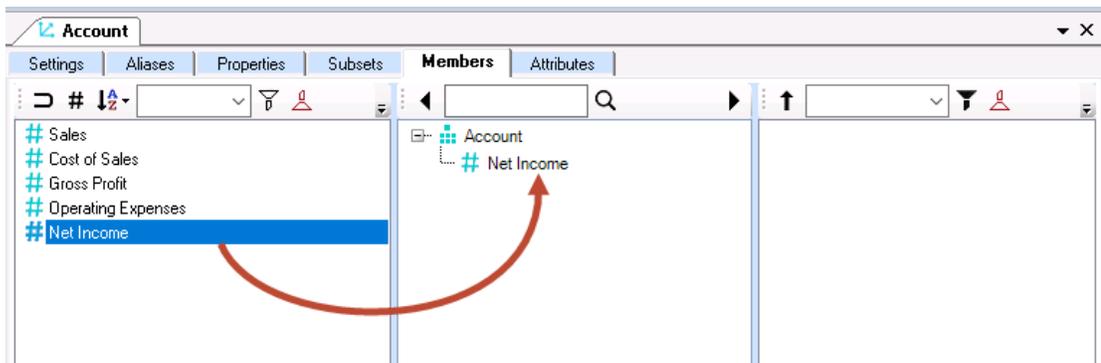
Hierarchy structures for the *Account* dimension:

Parent: Net Income
Children: Gross Profit Operating Expenses

Parent: Gross Profit
Children: Sales Cost of Sales

To define the Hierarchy Structure:

- In the **Members Tab** of the Dimension Editing Window, select a Member from the left-hand pane (Members List box) and drag and drop under the target parent Member in the middle pane (Hierarchy Definition Box).
First, we need to identify the 'root member' or the highest-level parent. For this example, *Net Income* is that member. Therefore, select **Net Income** from the left-hand pane and drag and drop under **Account** in the middle pane.

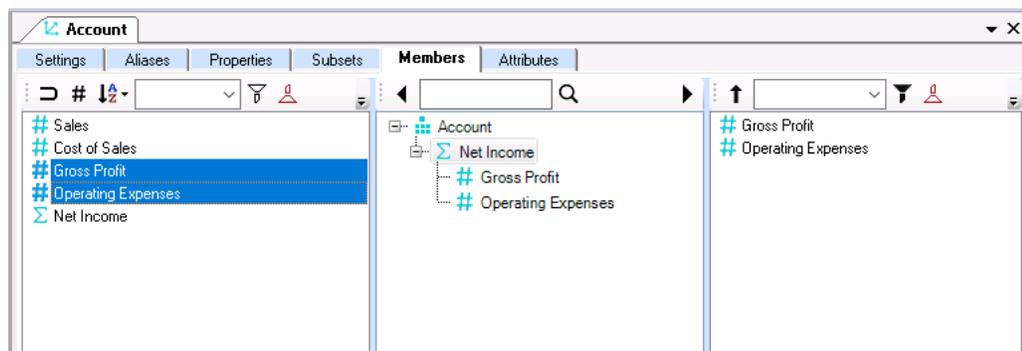


- Next, drag and drop the children Members (children of *Net Income*) *Gross Profit* and *Operating Expenses* from the left-hand pane to the middle pane under *Net Income*.

Tip: To add several Members as children of the same parent Member go to the Member List Box, click the first Member to add as child, then press and hold **Ctrl** key; click on the rest of the Members to be added as children (all of the selected Members will be highlighted); then drag and drop these child Members under the correct parent Member in the Hierarchy Definition box.

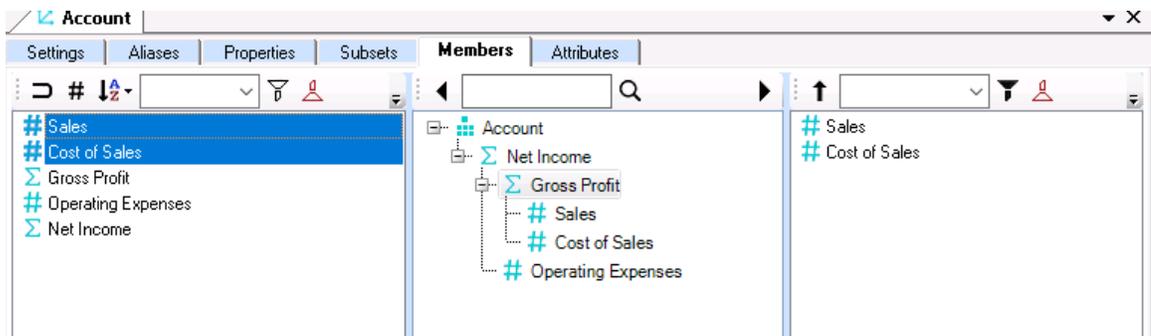
IMPORTANT: Another way to add Members is to copy a list, e.g., from Excel, and paste them into the Member List box.

The Hierarchy will look as follows:



Important: Notice how the icon preceding *Net Income* changes from a Hash symbol (#) to a Sigma symbol (Σ). The symbols indicate the type of Member: Hash for Detail (aka 'Leaf level' Member) and Sigma for 'Aggregate'.

- Next, drag and drop the *Sales* and *Cost of Sales* from the left-hand pane to the middle pane under *Gross Profit* to create that hierarchy.
The hierarchy will now look as follows:



Gross Profit will be the sum or aggregation of *Sales* and *Cost of Sales*, while the *Net Income* will be the aggregation of *Gross Profit* and *Operating Expenses*.

HOWEVER, as we know, the logic behind this should be:

$$\text{NET INCOME} = \text{GROSS PROFIT} - \text{OPERATING EXPENSES}$$

And;

$$\text{GROSS PROFIT} = \text{SALES} - \text{COST OF SALES}$$

As the calculations in the hierarchies for *Net Income* and *Gross Profit* are incorrect as is, we need to apply **Aggregate Weights** (in this case, '-1') for the Members in question.

4. Define Aggregate Weights (*Account* Dimension)

'Aggregate Weights' (also called 'Hierarchy Weights' or 'Member Weights') are used when a Member must be assigned a 'multiplied' value in an aggregation in order for the data to be properly calculated. Aggregate weights can carry a **positive** or **negative** value.

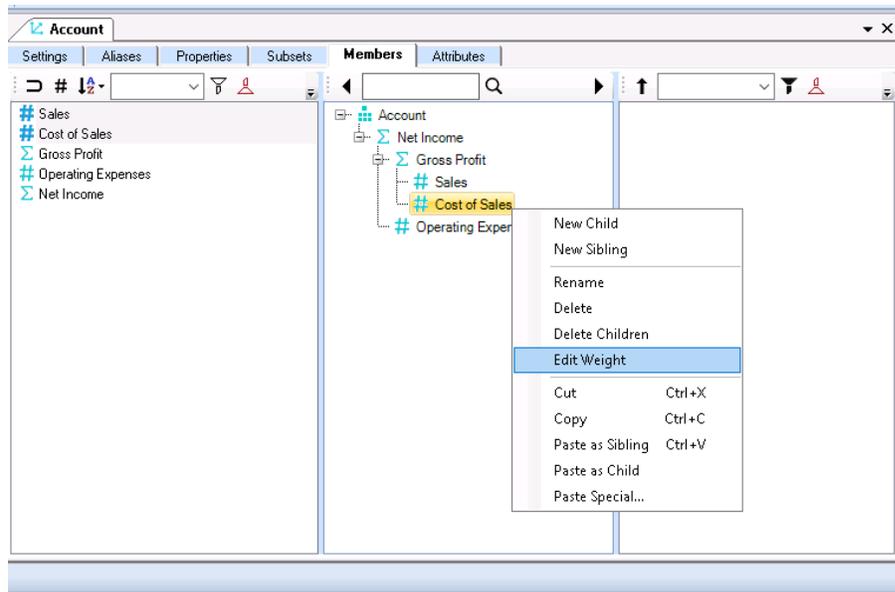
Simply stated, **the Member value will be multiplied by the defined 'Aggregate Weight' and the result will be 'rolled up' to calculate the Parent member value.**

Important: Multiplying the member value to the aggregate weight does not change the sign of the number. In other words, multiplying a negative 'aggregate value' to a Child Member will not make the Child Member a negative value. It will only affect how the value for that Child Member will be 'treated when rolled up to the aggregate'. Hence all negative values will be subtracted, and all positive values will be added as it rolls up to the Parent member.

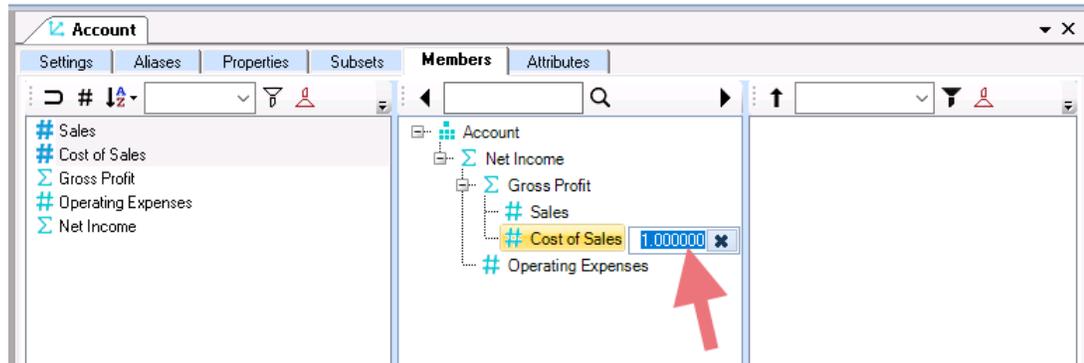
For this example, we know that the calculation for *Gross Profit* is '*Sales minus Cost of Sales*'. To apply this logic, we need to assign a negative aggregate weight (-1) to *Cost of Sales*, so that *Cost of Sales* values will be subtracted as it rolls up to *Gross Profit* values.

To define Aggregate Weight for *Cost of Sales*:

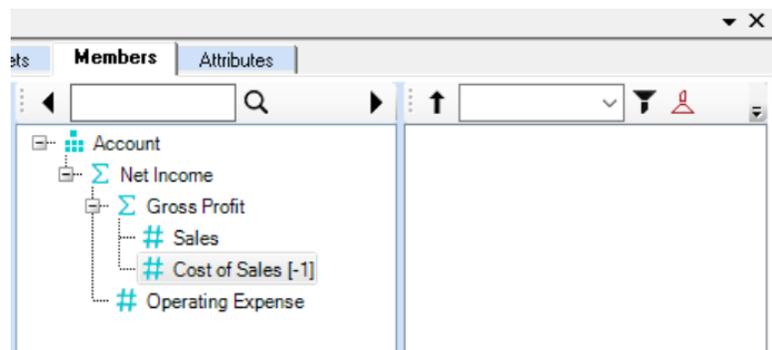
- In Hierarchy Definition Box, right-click on the **Cost of Sales** member.
- In the right-click context menu that appears, select **Edit Weight** (as shown below).



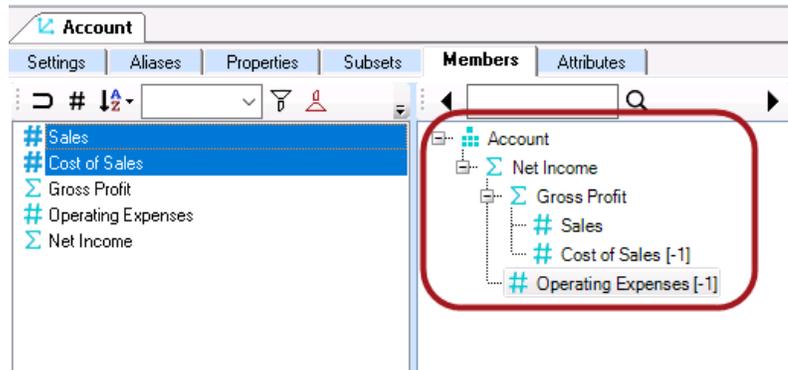
- In the aggregate weights textbox that appears (as shown in the next image, before any change is applied), change the value to **-1**; press the **Enter** key or click away from the text box.



The Hierarchy will now look as follows:



- Next, to apply the correct logic for computing Net Income: in the Hierarchy Definition Box, right-click on the **Operating Expenses** member and select **Edit Weight**.
 - Change the member weight of **Operating Expenses** to **-1**.
- The finished **Account** hierarchy will look as follows:

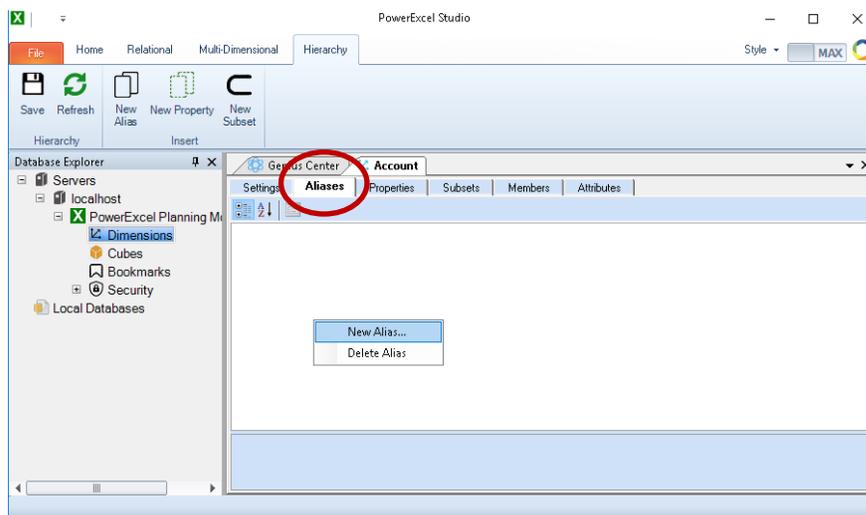


5. **Define Aliases and Alias Group** (*Account* Dimension)

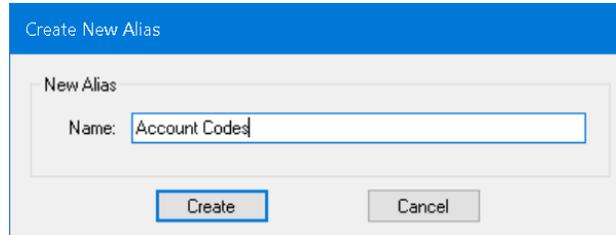
You can also define alternative names for Members within a Dimension, i.e., other than their default or original Member names, aka *Aliases*. There are many uses for Aliases—for example, to use a common name, a shortened name, or the Member name in a foreign language. Any of these, and other uses, could enhance reporting capabilities.

Important: Aliases exist within an Alias Group; therefore, an Alias Group must be created before assigning Members with Alias names. Note that all Members do not need to be assigned an Alias.

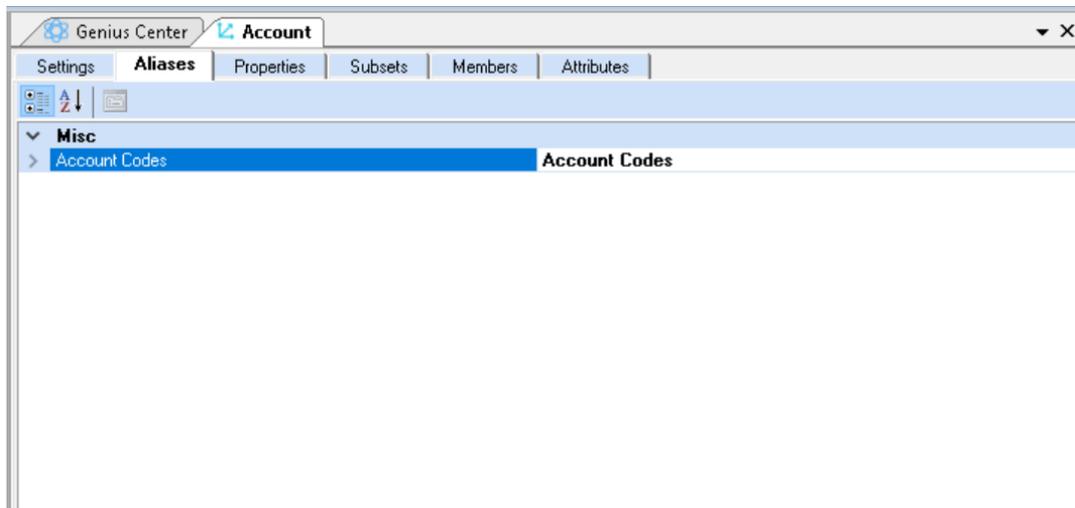
- To create Aliases, begin by creating the Alias Group. Go to the **Aliases Tab** of the Dimension Editing Window (circled in the image below).
- Right-click on the content page and select **New Alias**.



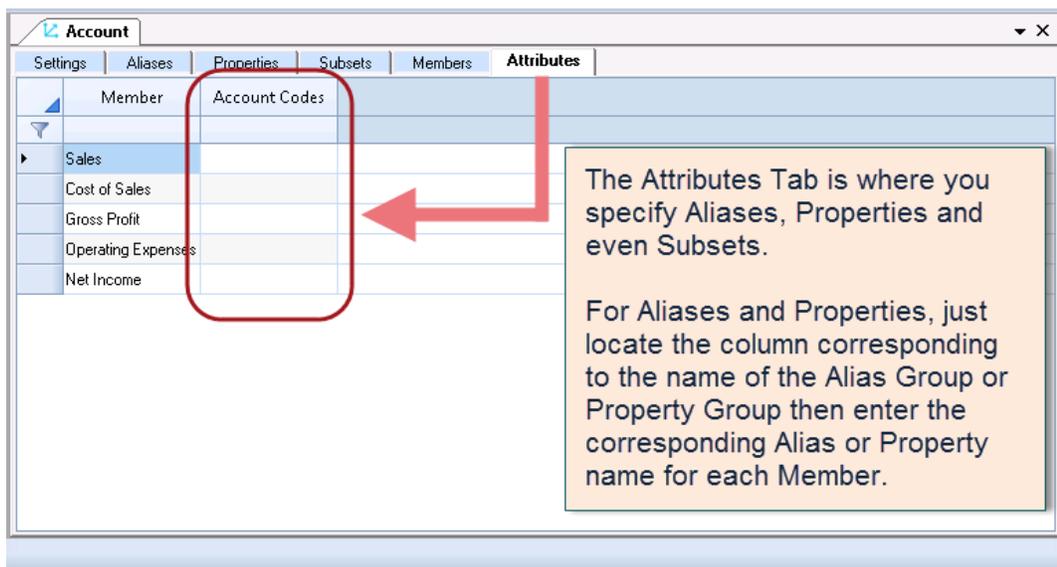
- In the Create New Alias dialog, type the <Alias Group name>. For this example, type “Account Codes”.



- Click **Create**. The new Alias Group will appear as follows:



- Next, go to the **Attributes Tab** to define the corresponding Alias for each:



- In the column **Account Codes**, type the Alias for each Member in the **Account** dimension so that it looks as follows:

Account	
Settings	Aliases
Member	Account Codes
Sales	R0001
Cost of Sales	E0001
Gross Profit	GP
Operating Expenses	OE001
Net Income	R0002

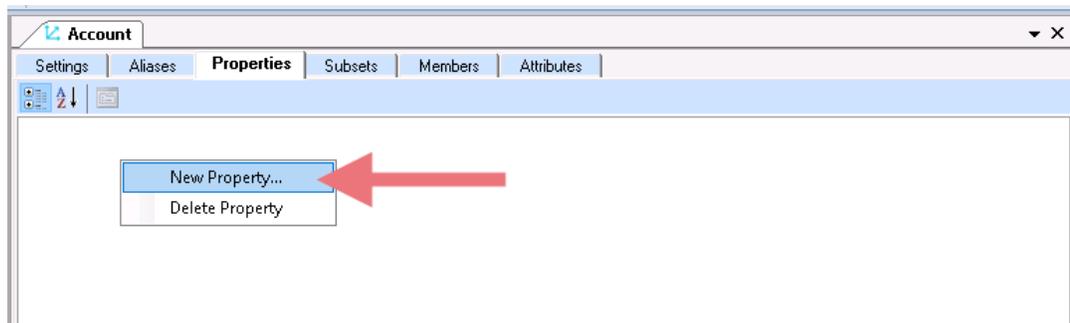
6. **Define Properties and Property Groups** (*Account* Dimension)

There are instances when you may want to apply tagged information to specific Members for purposes of annotation or to indicate Members that exist as a kind of group, but which do not belong in a hierarchy or an Alias group. In PowerExcel, we call this information a ‘Property’.

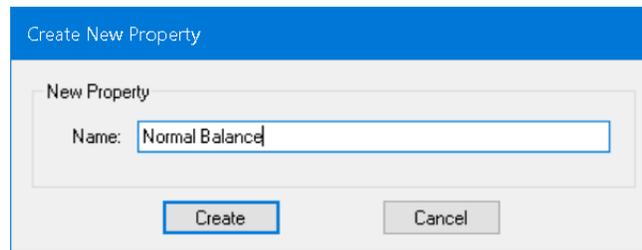
Important: Member Properties exist within a Property Group; therefore, a Property Group must be created before assigning Property names to existing Members. Note that all Members do not need to be assigned a Property.

To create a Property Group and define Properties:

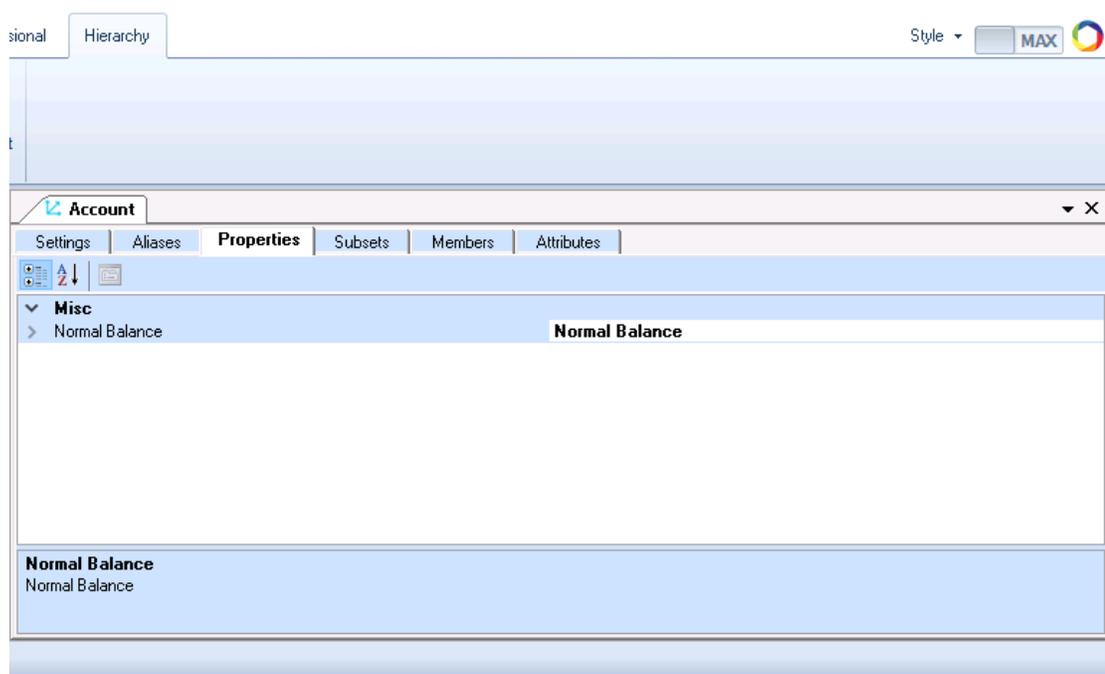
- Go to the **Properties Tab** of the Dimension Editing Window.
- Right-click on the content page and select **New Property**.



- In the Create New Property dialog that appears, type the **<Property Group name>**. For this example, type **Normal Balance**.
Note: For this exercise, let us assume that we want to tag each to indicate whether their normal balance is *debit* or *credit*.



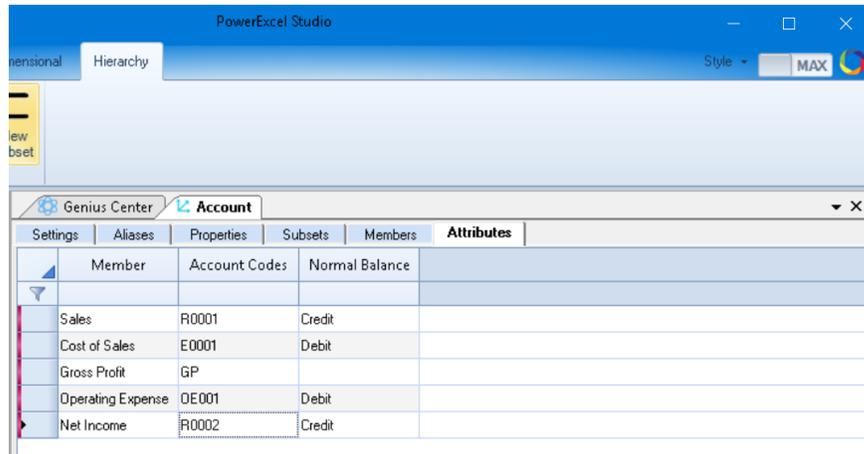
- Click **Create**. The new Property Group will appear as follows:



- Next, define a Property for each Member: click the **Attributes Tab** and look for the column *Normal Balance*; in the textboxes, type the Property for each Member, as in the following:

Account Dimension Members	Property (<i>Normal Balance Grp</i>)
Sales	Credit
Cost of Sales	Debit
Gross Profit	[<i>leave blank</i>]
Operating Expenses	Debit
Net Income	Credit

When finished, the Attributes Tab for the *Account* dimension will look as follows:



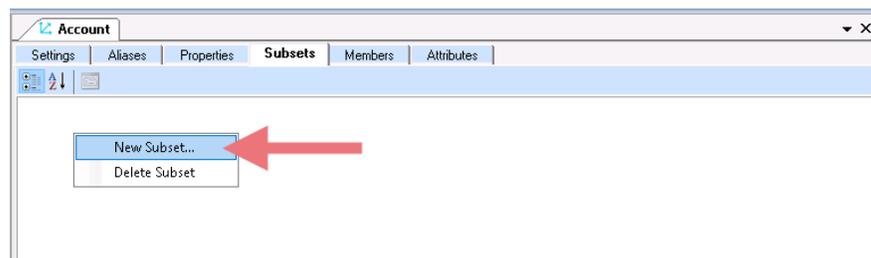
7. **Create Subsets** (*Account* Dimension)

Subsets are customized lists of Members, created so that you can easily “group select” that set of Members. This is especially useful when you frequently work with those Members (e.g., to create reports), and when a Dimension has a large Member list.

IMPORTANT: Subsets exist within a Subset Group; therefore, a Subset Group must be created before assigning Members to the Subset Group.

Begin by creating the Subset Group:

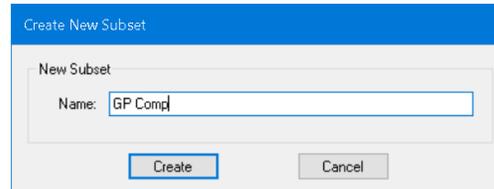
- Go to the **Subsets Tab** of the Dimension Editing Window.
- Right-click on the content page and select **New Subset**.



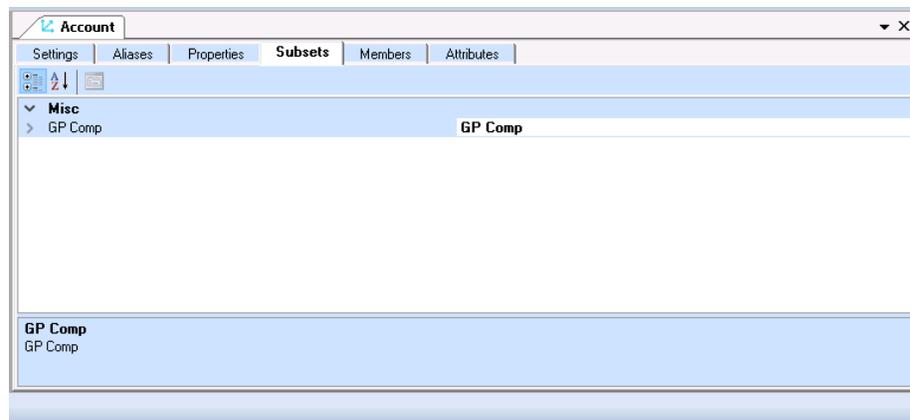
- In the Create New Subset dialog, type the **<Subset Group name>**. For this example, type **GP Comp** (short for Gross Profit Computation), as shown in the image below. **Note:** For exercise purposes only, let us assume that we want to create a subset group where we limit the Members to those that we use for calculating the Gross Profit value—thus, the accounts *Sales*, *Cost of Sales* and *Gross Profit*.

(In the given example, the Gross Profit Calculation is basic. However, in a real-life scenario, computing for Gross Profit may require more account items as components.

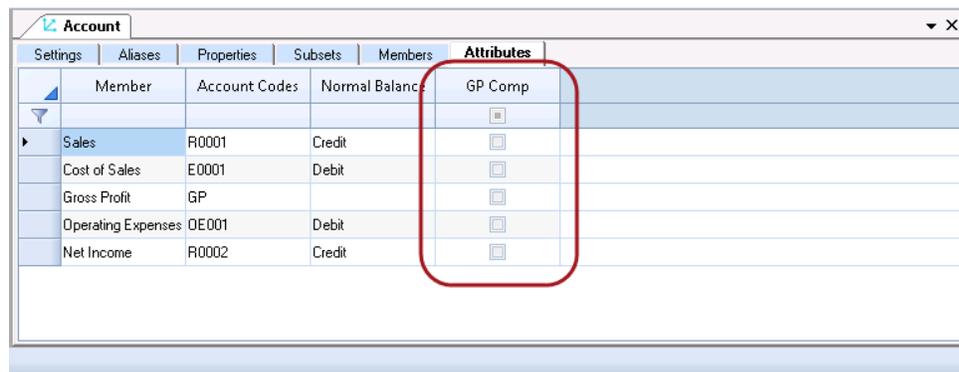
For instance, there may be several Revenue or Cost of Sales sub-accounts. And the Account dimension may consist of hundreds of Account items. In such cases, it may be wiser to create a smaller group of Subsets for specific analysis and reporting requirements.



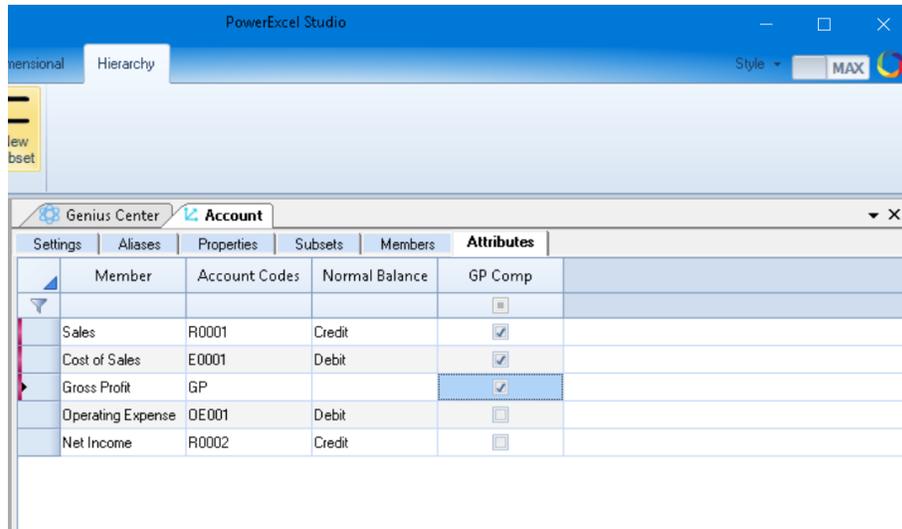
- Click **Create**. The new Subset group will appear as follows:



- Next, go to the **Attributes** Tab to define the Members you wish to include in the newly created Subset Group, i.e., **GP Comp**. Click the **Attributes Tab** and look for the column *GP Comp* (circled in the following image).



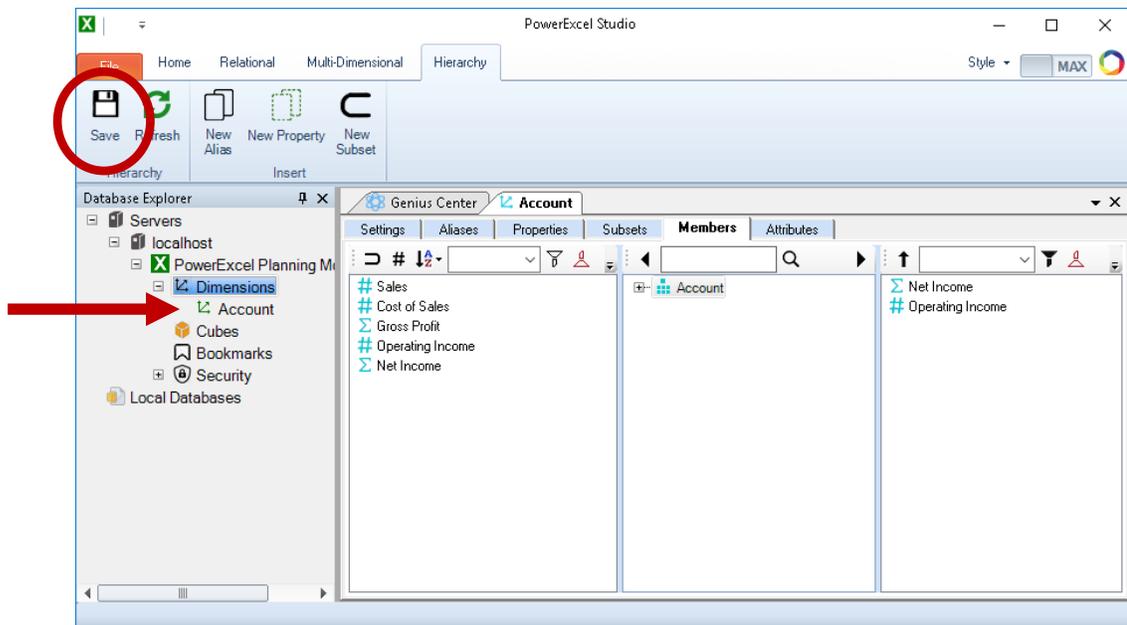
- To include Members to the Subset, tick their corresponding checkboxes, as shown below.



8. **Save** the Dimension.

When you have finished creating the Members, defining Dimension attributes and configuring the settings, you will need to save the Dimension for the changes to take effect.

- Go to the **Hierarchy Tab** of the PowerExcel ribbon and click the **Save** command icon (circled in the following image).



Note that the newly built/created Dimension, *Account*, now appears in the Database Explorer pane as an item under Dimension (see arrow in the preceding image).

This completes the creation of the *Account* dimension.

2.4 Create Additional Dimensions

With a better understanding of the procedures involved in creating a Dimension, its Members and its Attributes, you can then proceed to build additional Dimensions.

1. Create the **Version** Dimension:

Dimension Name: VERSION
Actual
Budget
Variance

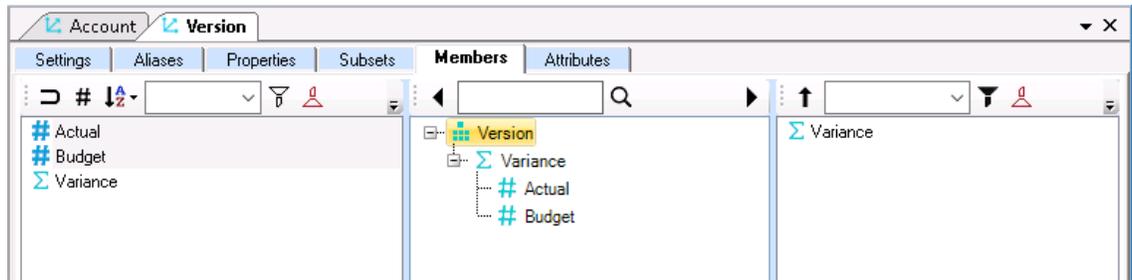
- Go to the Database Explorer and expand the correct database (i.e., **PowerExcel Planning Model 2020**).
- Still in the Database Explorer, right-click on **Dimensions** and select **New Dimension**.
- In the Create New Dimension dialog that appears, enter the <name of the dimension>, i.e., **Version**.
- Click **Save**. The Dimension Editing Window corresponding to *Version* Dimension appears.
- In the Dimension Editing Window that appears, go to the **Members Tab** and add the Members.

To do this:

- Go to the Members List box (left-hand pane).
- Click on the **Add Member icon** (Hash symbol).
- Type the <member name> in the textbox that appears and;
- Press the **Enter** key.

Add the Members: **Actual**, **Budget** and **Variance**.

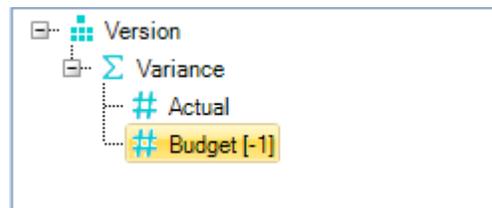
- To define the hierarchy for *Version* dimension, where *Variance* is the parent member while *Actual* and *Budget* are children of *Variance*:
 - Still in the **Members Tab**, drag and drop **Variance** from the left-hand pane (Member list box) to the middle pane (Hierarchy Definition Box) under *Version*. In this case, *Variance* becomes the 'root member'.
 - Next, drag and drop **Actual** from the left-hand pane to the middle pane under the member *Variance*. Notice how the icon in front of *Variance* changes from Hash Symbol (#) to Sigma symbol (Σ). The Sigma symbol indicates that *Variance* is an aggregate or parent member in the hierarchy structure of *Version*.
 - Lastly, drag and drop **Budget** from the left-hand pane to the middle pane under the member *Actual*, ensuring that *Budget* is on the same hierarchy level as *Actual*.



- Define the Member/Aggregate Weight to apply the formula logic whereby:
 $Variance = Actual - Budget$.

To do this:

- Still in the **Members Tab**, go to the middle pane (Hierarchy Definition Box).
- Right-click on the **Budget** member and select **Edit Weight**.
- In the Aggregate Weights textbox that appears, change the value to **-1**.
- Press the **Enter** key or click away from the text box.



- Complete the Version dimension by saving the dimension: on **Hierarchy Tab** of the PowerExcel ribbon click the **Save** command icon.

2. Create the **Region** Dimension:

Dimension Name: REGION
United States
Canada
Mexico
Colombia
Venezuela
North America
South America

- Go to the Database Explorer and expand the correct database (i.e., **PowerExcel Planning Model 2020**).
- Still in the Database Explorer, right-click on **Dimensions** and select **New Dimension**.
- In the Create New Dimension dialog that appears, enter the <name of the dimension>, i.e., **Region**.
- Click **Create**. The dimension editing window for the *Region* Dimension appears.

- In the Dimension editing window, go to the **Members Tab** and add the Members.

To do this:

- Go to the Members List box (left-hand pane).
- Click on the **Add Member icon** (Hash symbol).
- Type the <member name> on the textbox that appears and;
- Press the **Enter** key.

Add the Members: **United States, Canada, Mexico, Colombia, Venezuela, North America and South America.**

IMPORTANT: You can copy (from, for example, Word or Excel) and paste a group of Members into the Members list box: when you right-click to paste, select Paste Special—a window will appear like the one in the following image. Or you can use a PowerOLAP tab/other delimited file to do the following: right-click on the database and select **Import Metadata**.



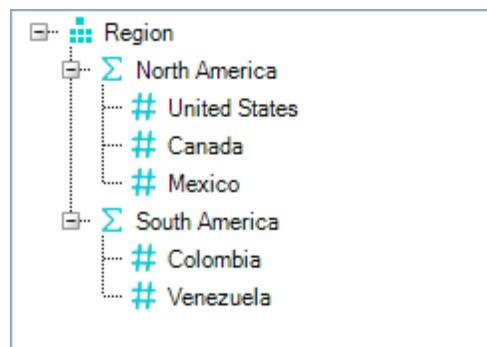
Note, too: There are other options to choose from when you when you right-click in the Hierarchy Definition box—see the image below.



- Define the hierarchy for *Region* dimension, whereby:
 - *North America* is the parent member with child members *United States*, *Canada* and *Mexico*.
 - *South America* is the parent member with child members *Colombia* and *Venezuela*
 - *North America* and *South America* are both on the same hierarchy level.

To do the above:

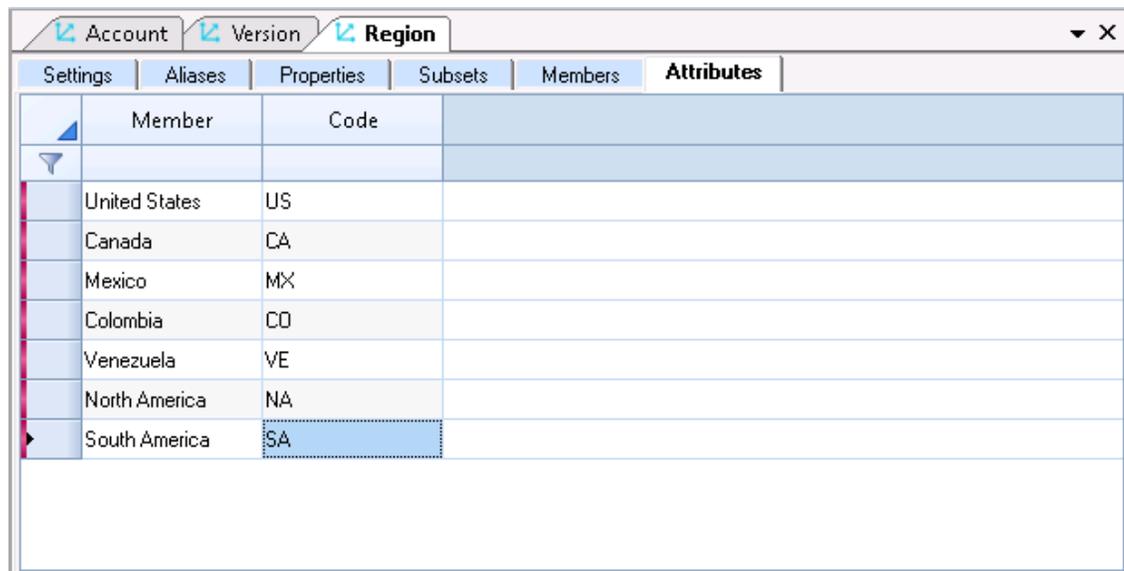
- Press then hold the **Ctrl** key then go to the left-hand pane of the **Members Tab** and click on the members **North America** and **South America** (These Members should be highlighted). Drag and drop these members to the middle pane under **Region**.
- Next, add the children of *North America*. Press then hold the **Ctrl** key, then go to the left-hand pane of the **Members Tab** and click on the members **United States**, **Canada**, and **Mexico** (These members will be highlighted). Drag and drop these members to the middle pane under *North America*.
- Next, add the children of *South America*. Press then hold the **Ctrl** key, then go to the left-hand pane of the **Members Tab** and click on the members **Colombia** and **Venezuela** (These members should be highlighted). Drag and drop these members to the middle pane under *South America*.



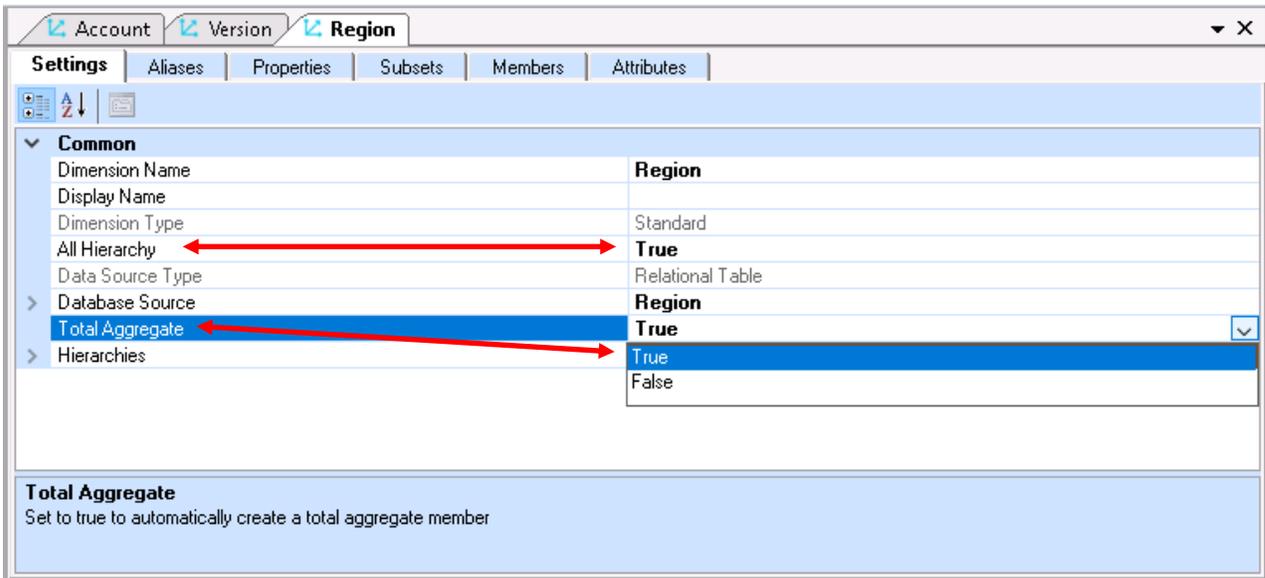
- Create an Alias Group and define aliases. To do this:
 - Go to the **Aliases Tab**.
 - Right-click on the content page and select **New Alias**.

- In the Create New Alias dialog that appears, enter the <alias group name>, i.e., **Code**.
- Click **Create**.
- Go to the **Attributes Tab** to define the Aliases.
Locate the column called **Code** and specify the following alias to their corresponding Members.

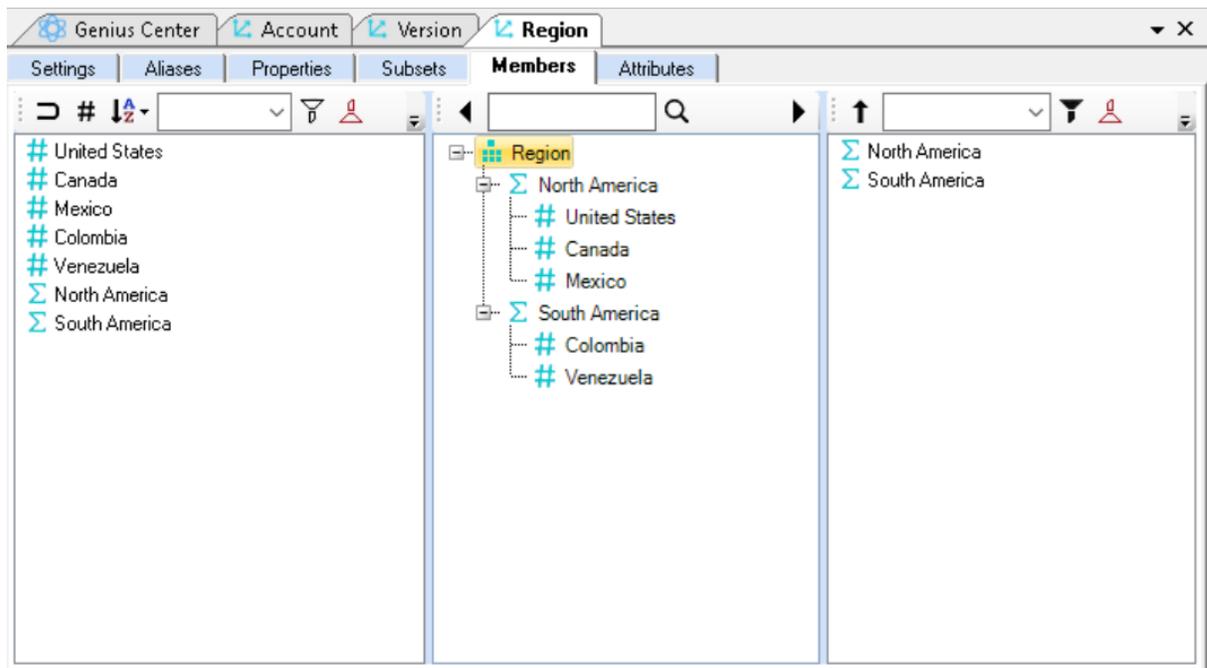
Region Dimension Members	Alias (Code Grp)
United States	US
Canada	CA
Mexico	MX
Colombia	CO
Venezuela	VE
North America	NA
South America	SA



- Go to the **Settings Tab**, to explore the options related to hierarchies (see next image).
 - Note the **All Hierarchy** option (top arrow), here set to **True**: this will create a Member that aggregates all Detail Members in the dimension (thus, an addition of *United States, Canada, Mexico, Colombia* and *Venezuela*). Setting this option to **False** will, logically, keep this Member from being added to the Dimension.
 - Locate the **Total Aggregate option** (last setting), which by default is **False**, and set it to **True**. When changed to **True** (as shown, second arrow), a *Total Regions* member will be created—this will add the existing hierarchies, which in this case are *North America* and *South America*.



- **Save** the Dimension.
The **Region** dimension looks as follows:

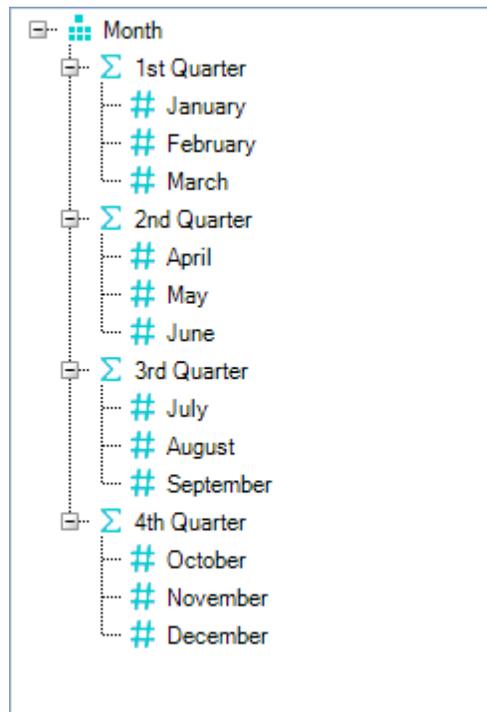


3. Create the **Month** Dimension:

Dimension Name: MONTH
January
February
March
April
May
June
July
August
September
October
November
December
1 st Quarter
2 nd Quarter
3 rd Quarter
4 th Quarter

- Go to the Database Explorer and expand the correct database (i.e., **PowerExcel Planning Model 2020**).
- Right-click on **Dimensions** and select **New Dimension**.
- In the Create New Dimension dialog that appears, enter the <name of the dimension>, i.e., **Month**.
- Click **Create**. The dimension editing window for the *Month* Dimension appears.
- In the Dimension editing window, go to the **Members Tab** and add the Members. To do this:
 - Go to the Members List box (left-hand pane).
 - Click on **the Add Member icon** (Hash symbol).
 - Type or copy-paste the <member names> on the textbox that appears and;
 - Add the Members: *January to December* and *1st to 4th Quarter*.
- Define the hierarchy for *Month* dimension, whereby:
 - *1st Quarter* is the parent member of *January, February* and *March*.
 - *2nd Quarter* is the parent member of *April, May* and *June*.
 - *3rd Quarter* is the parent member of *July, August* and *September*.
 - *4th Quarter* is the parent member of *October, November* and *December*.

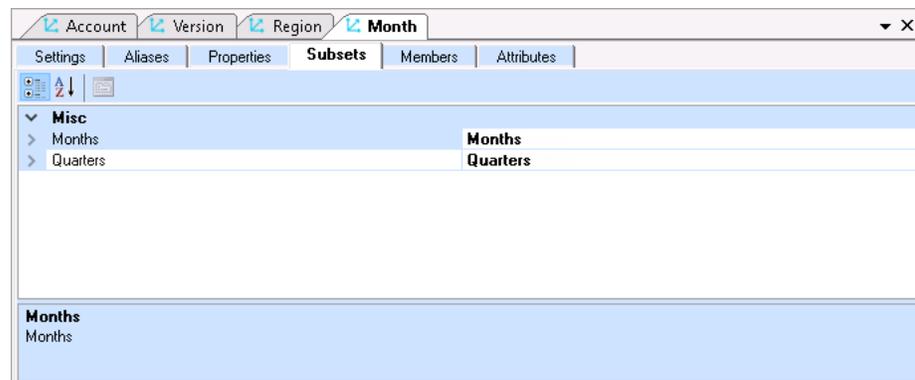
The **Month** dimension will appear as follows:



- Create a Subset Group. For this exercise, we will create two (2) subsets: the first subset will include individual months; the second subset will be the 4 Quarters.

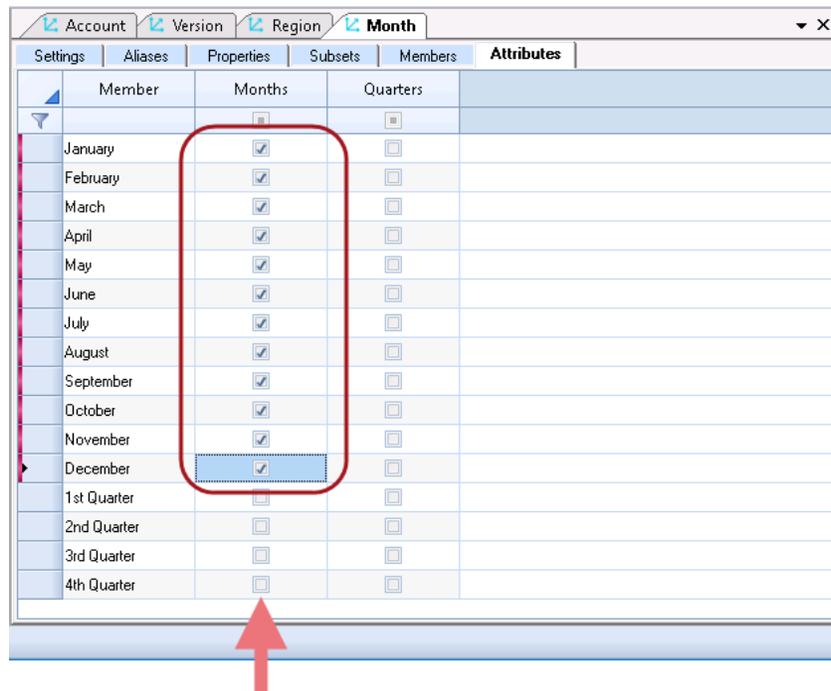
To do this:

- Go to the **Subset Tab**.
- Right-click on the content page, select **New Subset**, and in the Create New Subset dialog that appears, enter the <Subset Group name>, i.e., **Months**. Click **Save**.
- Once again, right-click on the content page, select **New Subset** and in the Create New Subset dialog that appears, enter the second <Subset group name>, i.e., **Quarters**. Click **Save**.

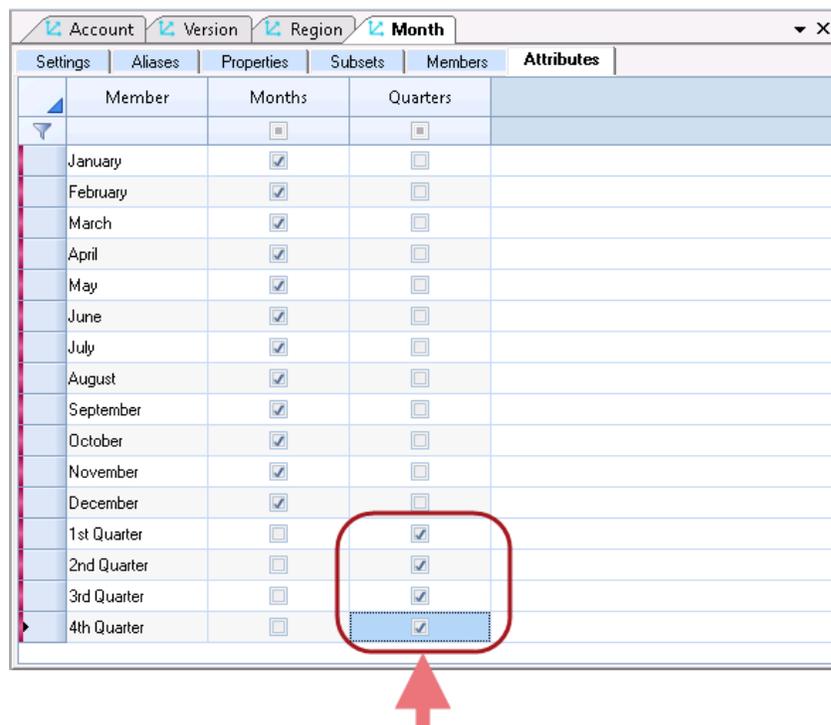


- Go to the **Attributes Tab** to define the subset members.

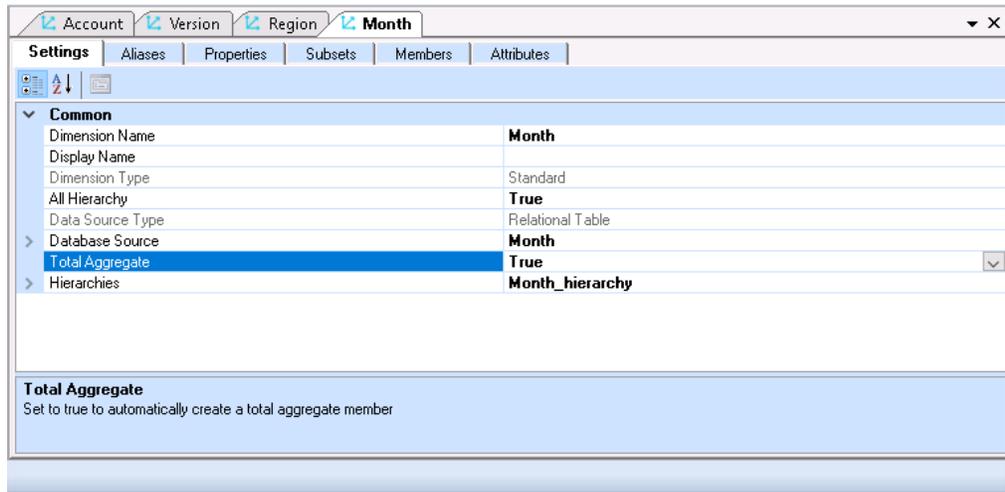
- In the column for **Months**, tick the checkboxes corresponding to the individual months **January to December** (as shown below).



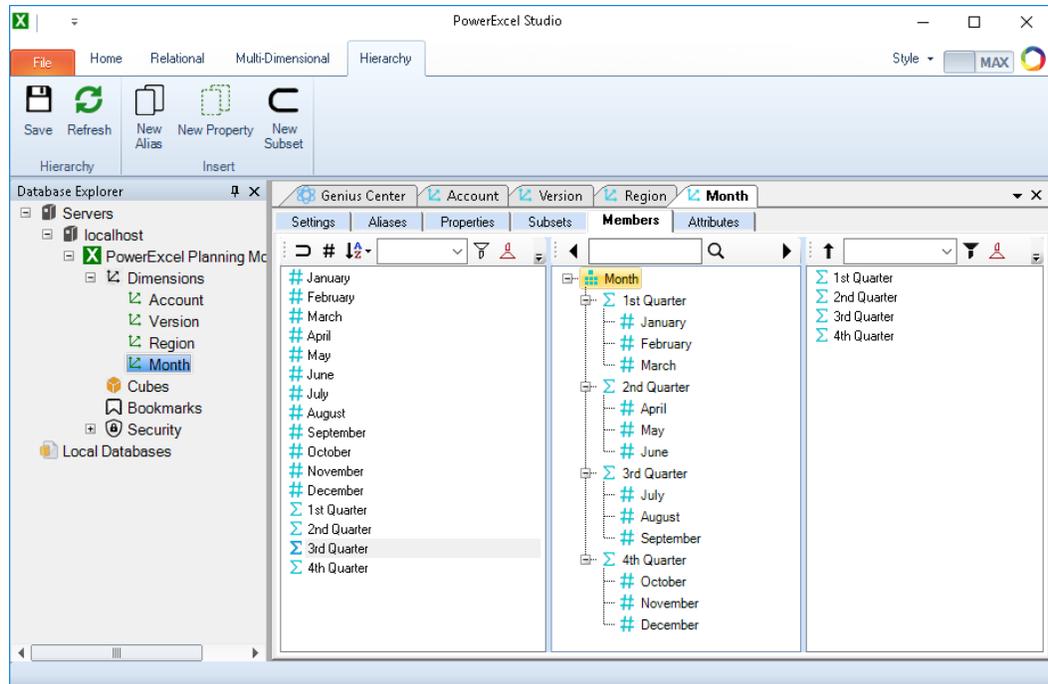
- In the column for **Quarters**, tick the checkboxes corresponding to the Quarters (as shown below).



- Enable the **Total Aggregate** option whereby all individual months roll up to the Total Month.
 - Go to the **Settings Tab**.
 - Locate the **Total Aggregate** option, click on the drop-down button corresponding to this setting and select **True**.



- **Save** the **Month** dimension creation by saving the dimension. The **Month** dimension looks as follows:

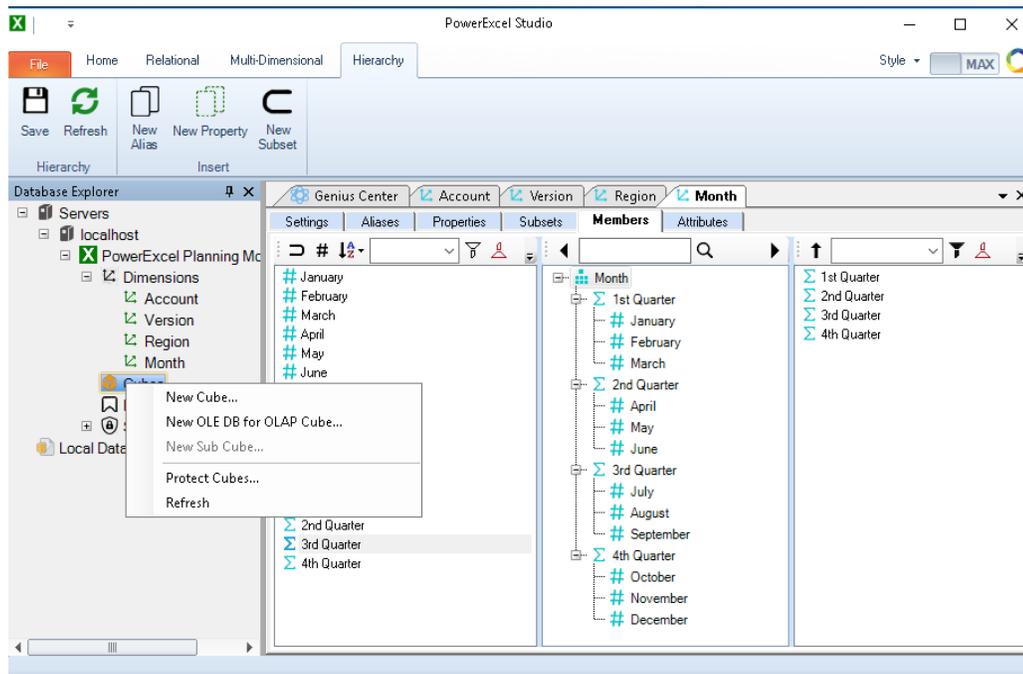


2.5 Create the PowerExcel Cube Model

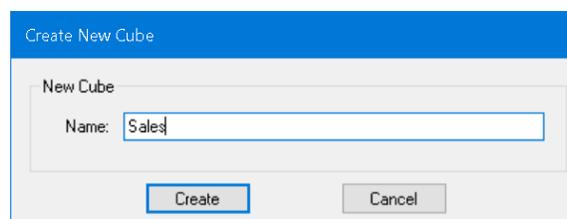
A Cube is a multidimensional model composed of Dimensions—like the ones created in the previous steps. Cubes may be composed of various Dimensions and serve different purposes. This cube (created from the *Account, Version, Region* and *Month*) is a good example of a financial reporting and planning model.

To create the Cube:

1. In the Database Explorer, expand to the correct database (i.e., **PowerExcel Panning Model 2020**).
2. Right-click on **Cubes** and select **New Cube**. The Create New Cube dialog appears.

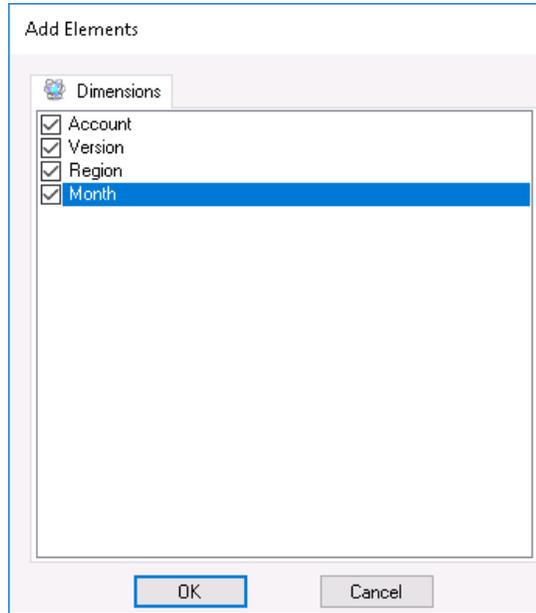


3. In the Create New Cube dialog, enter the <name of the cube>, i.e., **Sales**.

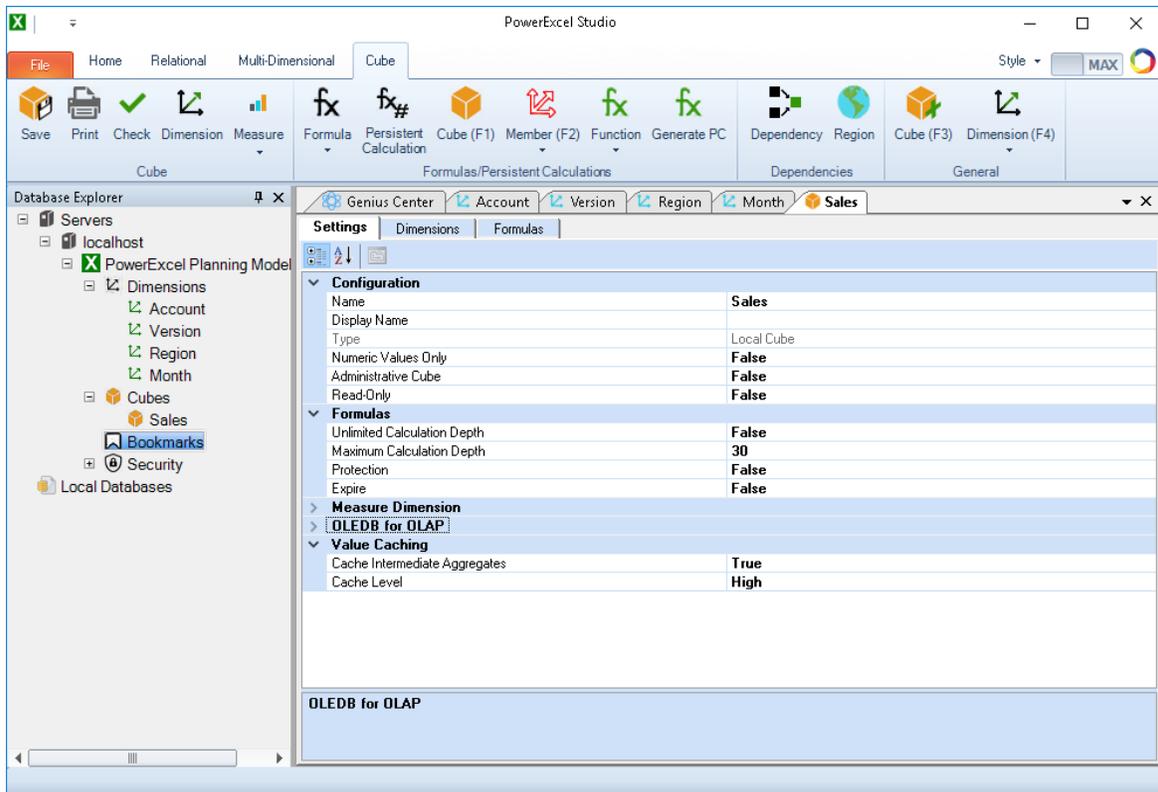


4. Click **Create**. The Add Elements dialog appears; this is where you will define the Dimensions to be included in the Cube.
5. Tick the checkboxes corresponding to the relevant Dimensions. For this example, tick all the checkboxes (i.e., *Account, Version, Region* and *Month* dimensions).

Note: In more complex models, you may have many more Dimensions from which to create one or more cubes. Furthermore, Dimensions can be used in more than one Cube.



6. Click **OK**.
7. The Cube Definition Window for the s cube appears, where you can further define Cube Settings.



The Cube Definition Window for PowerExcel Studio consists of three tabs: Settings, Dimensions, and Formulas. The following is a brief explanation of options available:

- **Settings Tab** - Cube information and configurable setting as follows:
 - Name – the Name of the Cube when created
 - Display Name – allows change to the Cube name displayed (after Save and reopen) in a front end.
 - Numeric Values Only – FALSE, the default setting, allows entry of text characters; TRUE limits values to numeric values.
 - Type – For present, “Local Cube” is the designation, no other option available in current version
 - Administrative Cube – FALSE allows the cube to be seen by all users; TRUE limits cube viewing to the Administrator.
 - Read-Only – FALSE allows editing by non-Administrators based on Security (if Security is enabled); TRUE allows no editing, even by Administrators.
 - Unlimited Calculation Depth – set to False, allows up to 30 levels of recursion for formula calculation; set to True, the program will continue to calculate.
 - Maximum Calculation Depth – sets the level of recursions for formula calculations
 - Protection – set to False, a PowerExcel Studio user may reach the Formula editor (see next section); set to True, a Password textbox will appear to limit access
 - Expire – when set to True, you can specify a time past, which formulas will not work

NOTE: A cube may be protected for the following reasons:

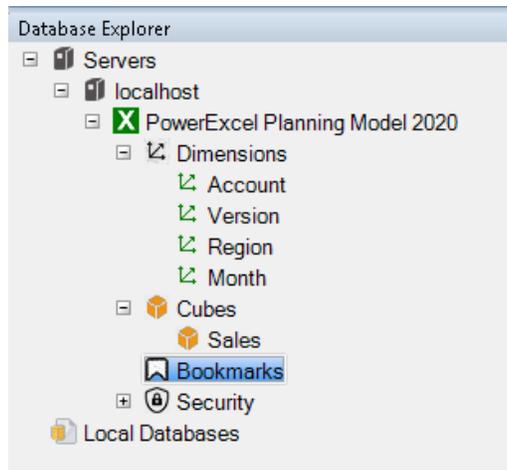
(1) An Admin or internal developer has locked the cube, so that it may not be changed by other users, or (2) This application may have been created by a publisher/implementer and, as a means to protect their intellectual property, they do not allow access to change/view the cube properties. Contact the publisher/implementer to change this protected status. And note that changes to Formulas and other meta data may require support from the publisher for the application to function correctly. FURTHER: if the Password is lost or otherwise unobtainable, contact the publisher of PowerExcel Studio (PARIS Technologies).

- Query Condition – not applicable in current version
- OLEDB for OLAP – not applicable in current version.
- Cache Intermediate Aggregates – TRUE retains cached values for intermediate aggregates; FALSE calculates aggregates upon each view.
- Cache Level – may be set to High, Medium, Low

- **Dimensions Tab** - allows you to reorder Dimensions as well as add or remove Dimensions in a Cube. This arrangement of Dimensions will dictate how they will appear in a PowerExcel Slice. In this example, we can reorder the Dimensions as follows:

Dimension Name	Type
Version	↶ Standard
Region	↶ Standard
Account	↶ Standard
Month	↶ Standard

- The third tab, **Formulas**, is the subject of a following section.
8. **Save** the Cube—click on the **Save** button at the top left of the PowerExcel Studio window. Notice that the newly built/created cube, i.e., **Sales**, now appear in the Database Explorer as an item under **Cubes**.



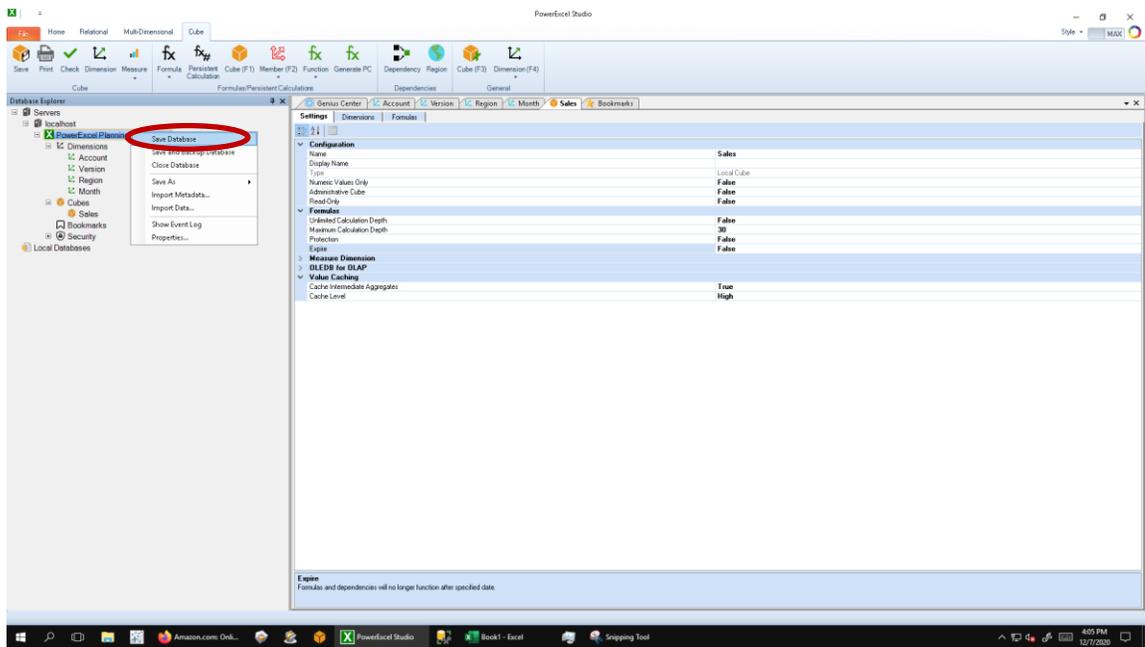
2.6 Save the Database

Important: Save the database at the end of Database creation or whenever you modify anything such as Dimension, Cubes or Attributes to successfully commit addition or changes.

It is a good practice though to perform a **Save Database** every so often, especially after making significant changes to your database or its components to secure any modification.

To save the Database:

1. Go to the Database Explorer and right-click on the database.
2. Click on the **Save Database** option (circled below).



3. Creating a Cube Formula

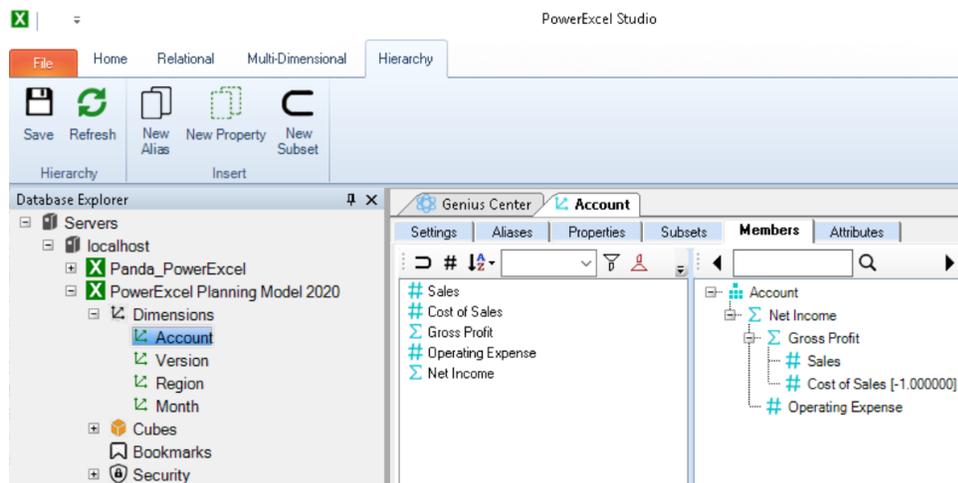
We will now consider PowerExcel’s more advanced capabilities, Cube Formula functions being the first. Cube formulas represent a powerful extension of the ability to perform mathematical calculations throughout a PowerExcel model. With Cube formulas, you can perform all manner of calculations to populate a cell, ranges of cells, and even entirely different Cube models.

Using the model, we have created up to this point, we will add a new Member to the **Account** dimension, *Gross Margin* (expressed as a percentage), and then populate that Member with a Cube formula that returns values according to the following standard calculation:

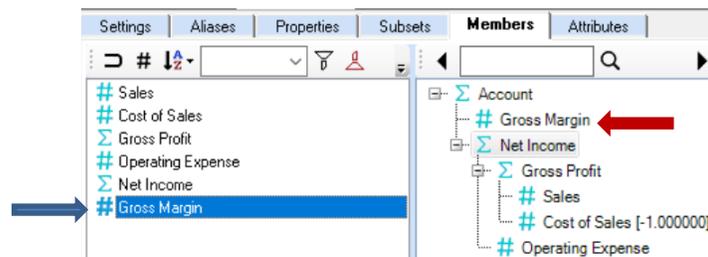
$$(Gross\ Profit/Sales) \times 100 = Gross\ Margin\ (Percent)$$

First, to create the new Member, *Gross Margin*:

1. In the Olation Database Explorer, expand Dimensions; right click on the **Account** dimension.
2. Click on the Members tab. In the middle pane, expand the dimension hierarchy.



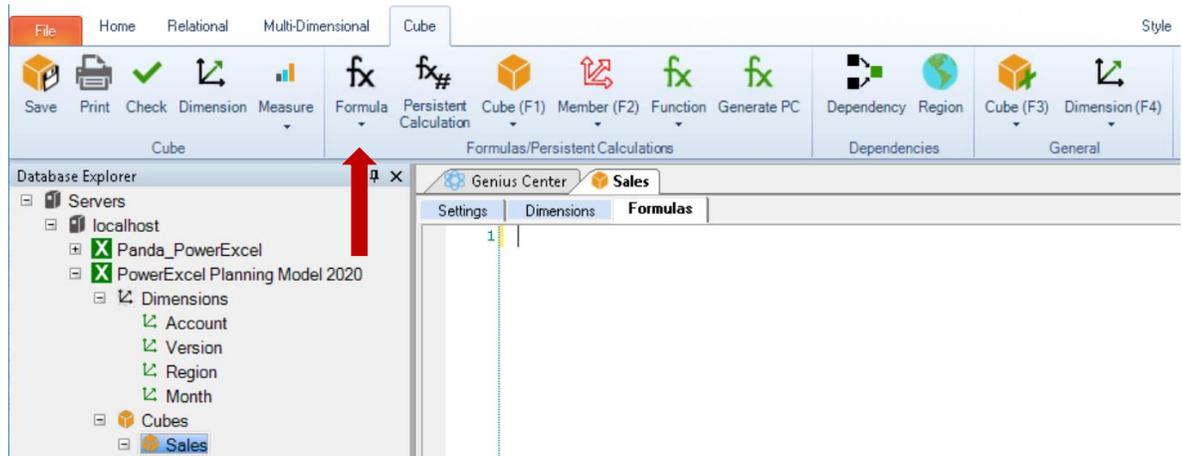
3. Right-click in the left pane, which lists the Members of the Account dimension. Select **New Member**, then name it “Gross Margin”



4. Drag the new Member *Gross Margin* above *Net Income* in the middle pane (see red arrow in the above image).

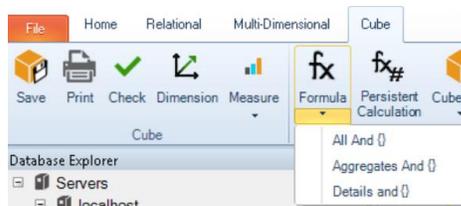
We are now able to create a Cube Formula to populate the new *Gross Margin* Member.

- In the Database Explorer, double click on the Cube in which we will create the formula, i.e., **Sales**.
- Click on the **Formulas tab**. Presently, it is empty, as shown in the following image.



NOTE: There is a range of icons that appears in the **Cube** tab, several that can be used in the creation of Cube Formulas. All icons, including those related to formula expressions (as well as a full explication of PowerExcel Formula capabilities) are explained the Olation Manual and Help file. For the present, we will use the icon indicated by the red arrow in the image above.

- Click on the drop-down under the Formula function icon (**fx**). The following selections appear:



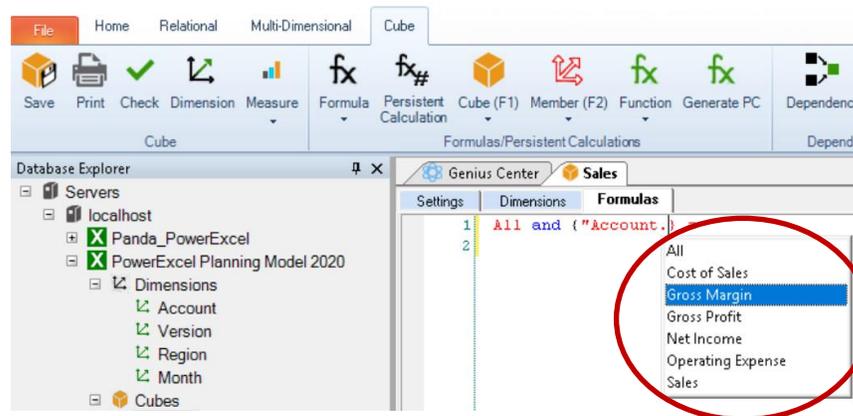
These three selections govern how values will calculate in the cube. They constitute the “Left-Hand Side” of the calculation, i.e., to the left of the Equals (“=”) sign, which are the defined intersection points to which calculated results are sent in the cube.

All and {} – calculations will populate all Members specified between the (squiggly) brackets, whether Detail or Aggregates.

Aggregates and {} – calculations will populate only Aggregate Members; calculations for Detail Members will be zero.

Detail and {} – calculations will populate only Detail Members; calculations for Aggregates will be the result(s) of hierarchical additions.

8. Select from the Formula (fx) icon **All and {}**.
9. Your cursor will be between the brackets: double-click on the **Account** dimension. It will appear, in red, in the formula text. Note that now you can select an individual Member in that dimension, as shown circled in the following image.



10. Select the Member **Gross Margin**. This is where we want the calculation to go, as a result of the logic written into the Right-Hand Side of the equation.
11. Type the following into the Right-Hand Side, i.e., to the right of the Equals ("=") sign, so that the formula statement looks as follows:

```
All and {"Account.Gross Margin"} = ["Account.Gross Profit" / "Account.Sales"] * 100;
```

12. Close the formula statement with a semi-colon (";"). Then right-click on the database (PowerExcel Planning Model 2020) to **Save Database**.

A discussion about Creating a PowerExcel Slice follows in a few pages. That said, for the present, it is worth showing a simple PowerExcel Slice report from the **Sales** cube, including the *Gross Margin* calculation (highlighted in the following image) just created by the Cube Formula in PowerExcel Studio. The Members--*Actual* and *Canada*--are dynamic, allowing selections across all **Version** and **Region** within the model. Furthermore, any selection of Members can be made in Rows (*Accounts*) and Columns (*Month*). Indeed, there are virtually limitless Slices that can be made from the model, all showing results dynamically calculated, including those done by the PowerExcel formula, in this case, *Gross Margin*.

	A	B	C	D	E	F	G	H	I	J
1	Database:	PowerExcel Planning Model 2020								
2	Cube:	Sales								
3	Dimensions:	Filter	Version	Members	Actual					
4		Filter	Region	Members	Canada					
5		Column	Month	Range	\$B\$9:\$I\$9					
6		Row	Account	Range	\$A\$10:\$A\$15					
7										
8	OLAPivotTable									
9		January	February	March	1st Quarter	April	May	June	2nd Quarter	
10	Net Income	450.00	250.00	300.00	1,000.00	0	0	0	0	0
11	Gross Profit	450.00	250.00	300.00	1,000.00	0	0	0	0	0
12	Sales	1,000.00	1,250.00	900.00	3,150.00	0	0	0	0	0
13	Cost of Sales	550.00	1,000.00	600.00	2,150.00	0	0	0	0	0
14	Operating Expe	-	-	-	-	0	0	0	0	0
15	Gross Margin	45.00	20.00	33.33	31.75	0	0	0	0	0
16										

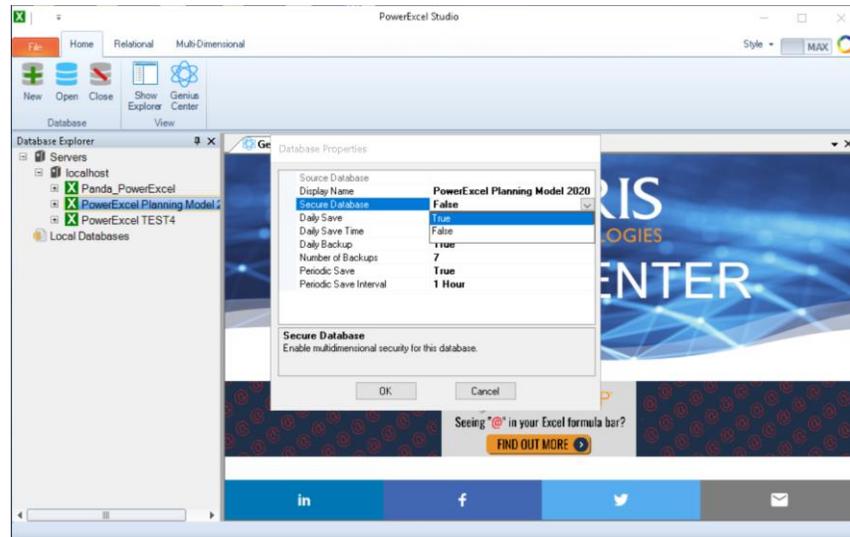
4. Defining PowerExcel Security – Users and Groups; Data Rules

Another advanced PowerExcel capability concerns Security—what you can do to create Users and Groups and to define security parameters (via “data rules”); Security determines what users can see or do within a PowerExcel model.

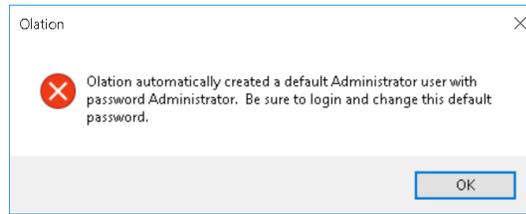
Creating a security schema involves several steps—the following is a simple example, which is intended to limit a User (Jack Villeneuve) to being able to “Write and Read” in the **Region** (dimension) of *Canada* (a member of that dimension) only.

NOTE: A full explication of PowerExcel Security capabilities is obtainable in the Olation Manual and Help file. As shown there, there are virtually limitless security rules that can be put in place to satisfy the most stringent customer security requirements.

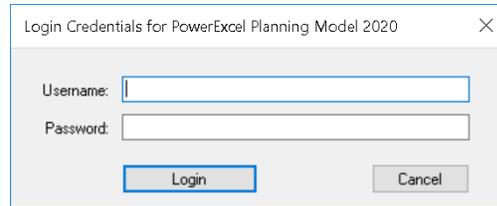
1. The first step in using Security is to make the PowerExcel database a Secure Database: right-click on the database in question (in this example, *PowerExcel Planning Model 2020*). From the right-click options, select **Properties**. The Database Properties dialog appears, where you can specify such options as Daily Save, Daily Save Time, Daily Backup, etc.; select, first, **Secure Database** → **True**.



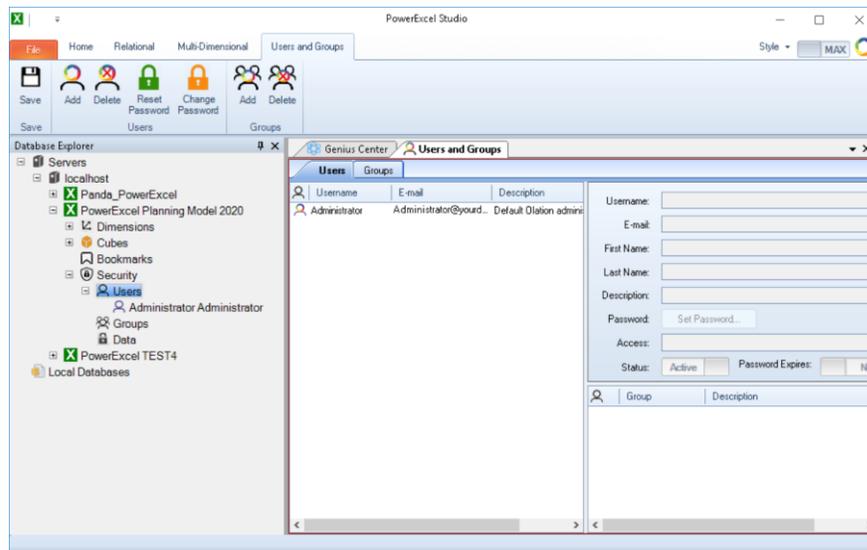
2. A message will appear indicating that the database is secure, and the default Username and Password: Administrator/Administrator.



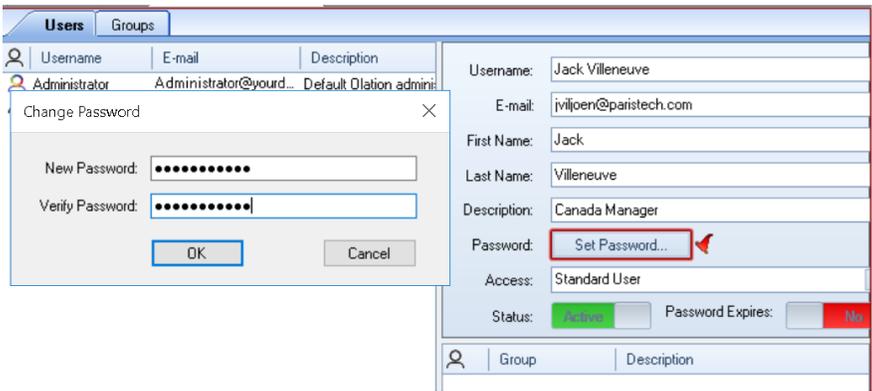
- The next time you open the database or try to create a Slice, you will be prompted:



- Having entered the Username and Password, you can proceed by clicking **Login**. Right-click on **Users** to begin indicating Users and setting up Data Rules for them (note that the Administrator user now appears).



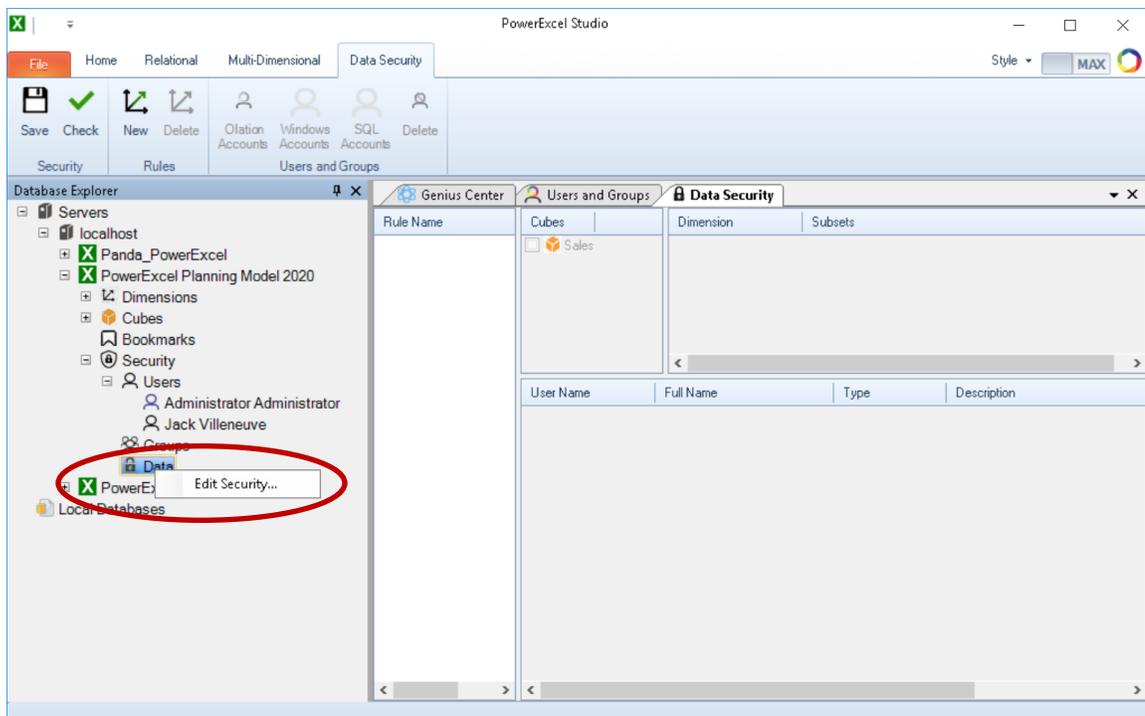
- Right-click on the left-hand pane, under the **Users** tab, and select **Add**. The fields at right become active, for you to fill in information for added Users—as in the following image, filled in for “Jack Villeneuve”.



6. Click on the **Set Password** button. Next, be sure to **Save** on the Users and Groups tab, which has become active.

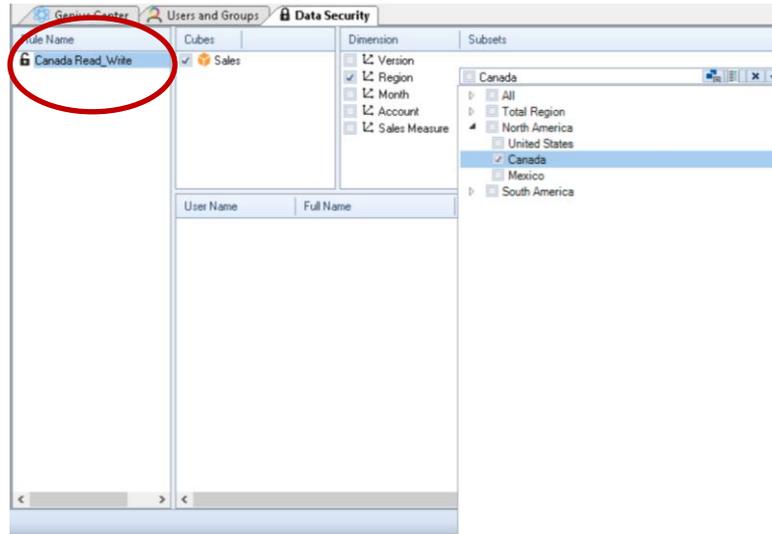


7. The next step is to create a Data Rule for the user. In the Database Explorer, under **Security**, right-click on **Data** and select **Edit Security**, shown circled in the following image.

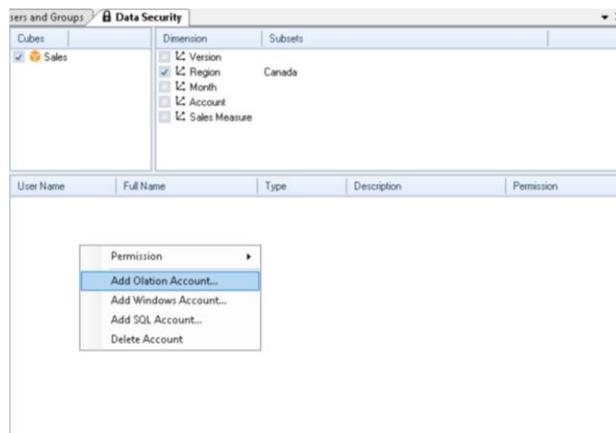


8. In the leftmost pane on the right under **Rule Name**, right-click and select **New**. Give the Rule a name (*Canada Read_Write*, as shown circled in the following image). The panes to the right

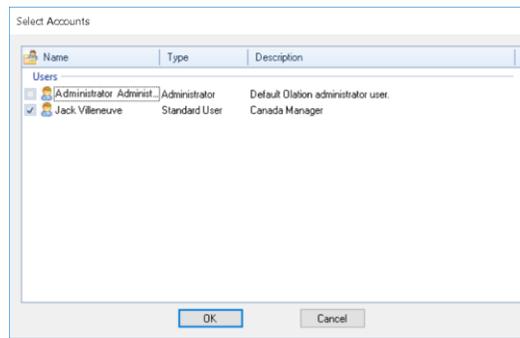
become active—here you can select a Cube(s) and, following that, Dimensions and Members that will comprise parts of the definition for the Rule you have in mind. In this example, the intention is to limit the new user to being able to “Write” to (which includes “Read” privileges) only the Region Canada. These selections are shown in the following image.



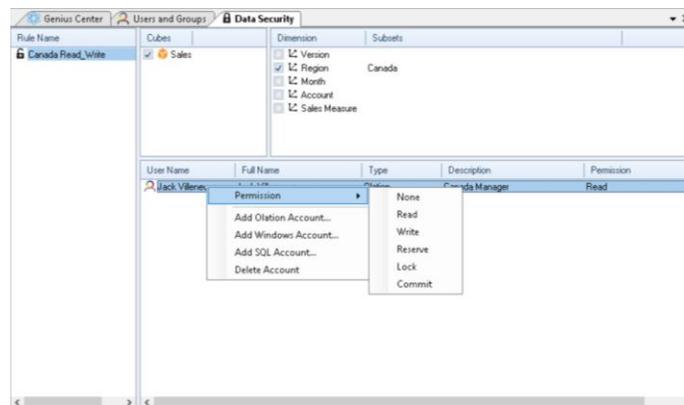
- Next you will specify the User: right-click in the bottom right pane and select Olation Account, as shown in the following image (other options are available, in order to specify other user login accounts).



- The Select Accounts window appears with named users:



11. Select the User (in this example, *Jack Villeneuve*) and click **OK**. The User will be listed in the bottom pane. Right-click and select the Data Rule level of privilege (in this example, **Write**).



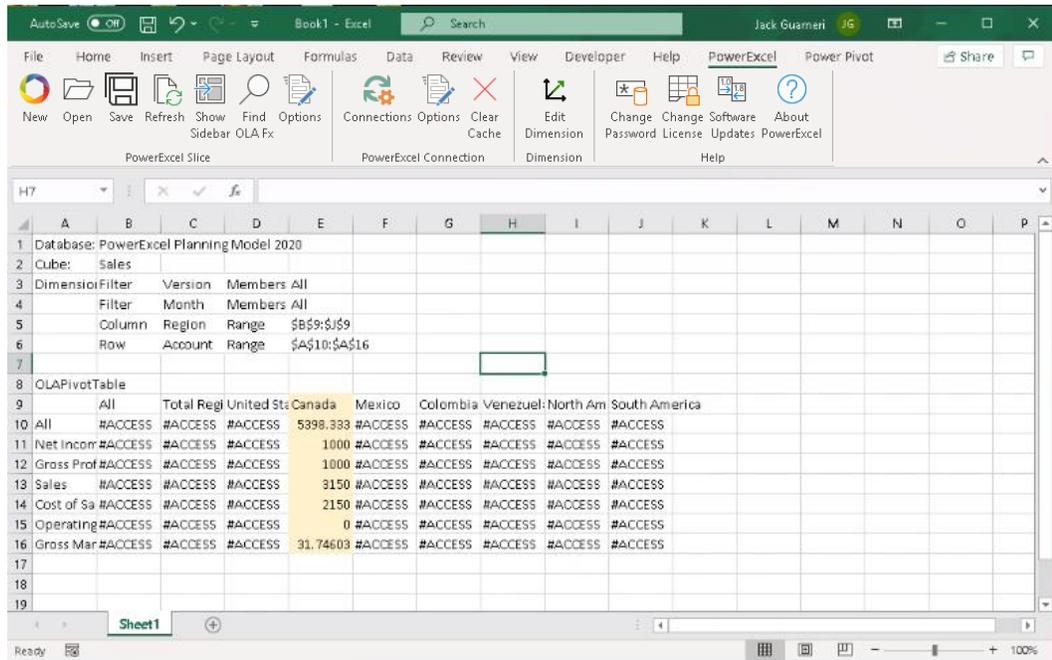
12. The User and his or her privilege will be shown:

User Name	Full Name	Type	Description	Permission
Jack Villeneuve	Jack Villeneuve	Olition	Canada Manager	Write

13. Click Save, the leftmost icon, in the now-active Users and Groups tab:



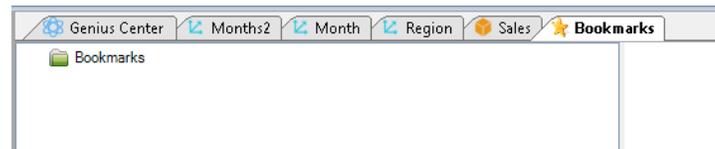
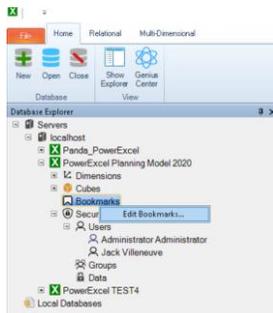
14. Now, with the User created and the Data Rule(s) saved for that User, the next time he or she opens a view (e.g., via a PowerExcel Slice, as shown in the next image), only Canada data will be visible (highlighted in the image). In this example, the user, Jack Villeneuve, would also be able to “write” values in Detail intersection cells, assuming that were part of the application (e.g., a budget or forecast planning exercise). Note that all other cells show #ACCESS (as shown in the following image).



5. Creating Bookmarks

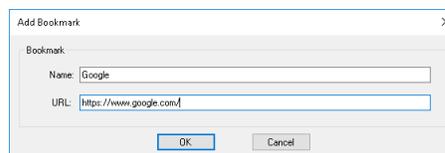
The Bookmarks capability within PowerExcel allows users to create folders and save bookmarks of key websites, which typically feature information/data (e.g., an online dashboard) related to an model in the program; bookmarks can also be used for any other relevant site, Bookmarks are reachable from a front end like PowerExcel Slice.

1. To create a Bookmark, right-click on **Bookmarks** in the Database Explorer; then select **Edit Bookmarks**. The Bookmarks Tab appears on the right. (See images below.)

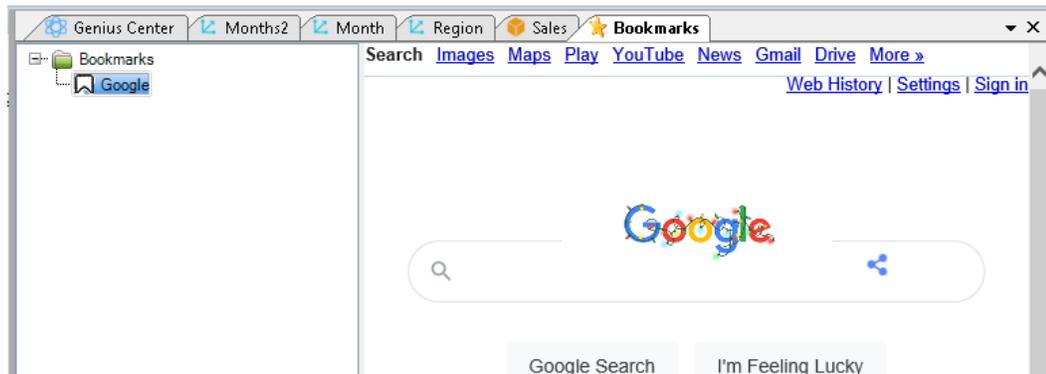


This Bookmarks capability within PowerExcel allows users to create folders and save bookmarks of key websites, which typically feature information/data (e.g., an online dashboard) related to an analytical database model in the program; bookmarks can also be used for any other relevant site. Bookmarks are reachable from a front end like PowerExcel or a PowerOLAP slice.

2. To add a Bookmark: **right-click** on the **Bookmarks folder**—here you can Add Bookmark, create a New Folder, Rename Bookmark, or Delete Bookmark.
3. Select **Add Bookmark**: The Add Bookmark window appears, where you will Name the Bookmark and provide its URL (Google has been used as an example, per the below image):



4. When you click **OK**, the selected Bookmark’s website appears on the right pane.



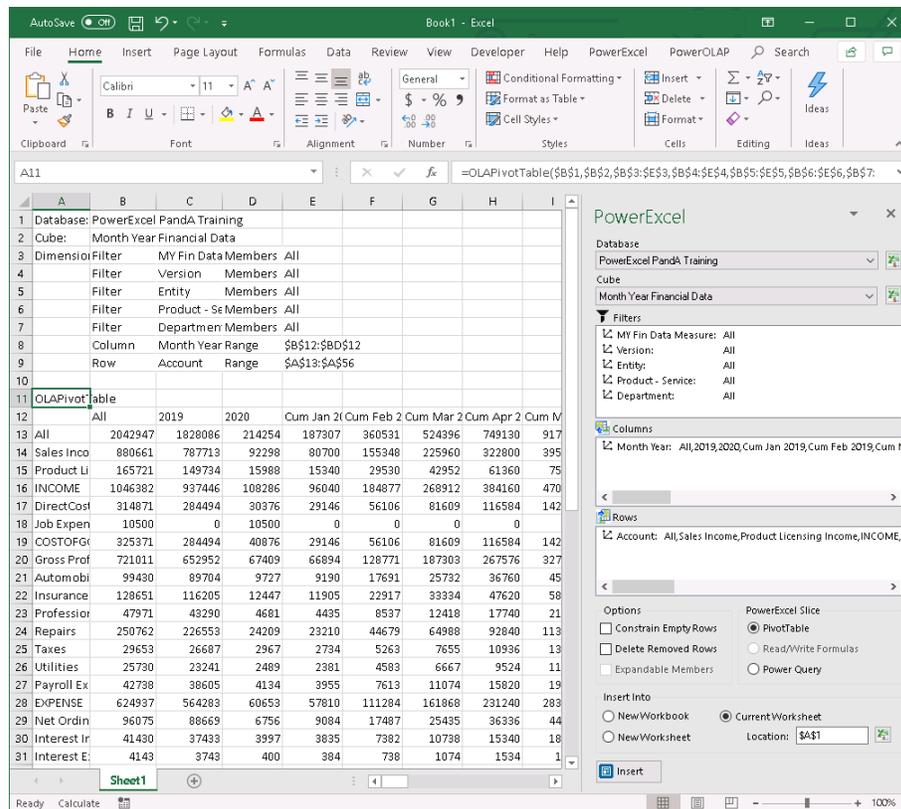
PLEASE NOTE: The following two topics—**Creating a PowerExcel Slice** and **Entering Data in a Cube**—are explained fully in the PowerExcel User Manual. They are included below for conceptual understanding of what would happen next, after creation of a PowerExcel Model, as described in the preceding pages. The images that follow are from a different cube model from the preceding example. Rather, that model is the *P&L Forecasting Sandbox*, provided to users who wish to test PowerExcel. Note that in the screen images, the database connection has been given the name *PowerExcel Panda Training*, as circled top right in the image below; the Cube selected—also circled top right in that image—is *Month Year Financial Data*.

6. Creating a PowerExcel Slice

Once a PowerExcel Model has been created, the full use and power of the product becomes evident when a user creates a “Slice,” from Excel, of the data in the mode. To do so, a user will Create a Connection to the PowerExcel model, typically hosted in the cloud. The Connection to the model, and all that follows, is accomplished via an Excel Add-in, whose ribbon is shown in the below image. Following that, a user will simply select a database and associated cube(s).



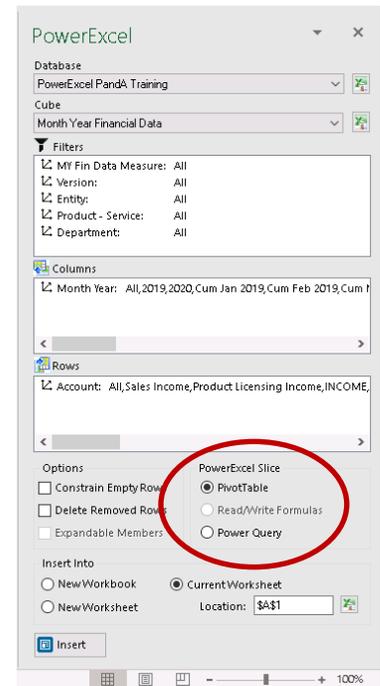
The following screen image is an example of a PowerExcel Slice:



Note that the PowerExcel “pane” in the previous spreadsheet (shown in detail, at right): a user will create the Slice via a PivotTable, a Read/Write Formula, or a Power Query (see radio buttons midway down, circled) and then orient any data view of the model by arranging and making selections among the Dimensions in the Filters, Columns and Rows boxes. The number of views—‘Slices’—of the PowerExcel model that can be made are truly limitless.

As one example, note the Slice below: Dimensions have been nested in Columns, with the **Products – Services** Dimension (specifically, the Members *Product 1, Product 2, Product 3*) showing under the **Department** dimension (specifically, the Members *Online Sales and Direct Sales*).

Slices can be saved to the Cloud and viewed by any user who has a connection to the same PowerExcel database.



	A	B	C	D	E	F	G	H	I	J	K
1	Database:	PowerExcel Panda Training									
2	Cube:	Month Year Financial Data									
3	Dimensions:	Filter	MY Fin Data	Members	All						
4		Filter	Version	Members	Actual						
5		Filter	Entity	Members	All						
6		Filter	Month Year	Members	All						
7		Column1	Department	Range	\$B\$12:\$G\$12						
8		Column2	Product - Serv	Range	\$B\$13:\$G\$13						
9		Row	Account	Range	\$A\$14:\$A\$57						
10											
11	OLAPivotTable										
12		Online Sales	Online Sales	Online Sales	Direct Sales	Direct Sales	Direct Sales				
13		Product 1	Product 2	Product 3	Product 1	Product 2	Product 3				
14	All	263674	48914	49235	112495	104060	59075				
15	Sales Income	112910	24082	21072	48164	44552	25286				
16	Product Licensing Income	22582	0	4214	9633	8910	5057				
17	INCOME	135492	24082	25286	57797	53462	30343				
18	DirectCosts	42906	0	8007	18302	16930	9609				
19	Job Expenses	0	0	0	0	0	0				
20	COSTOFGOODSSOLD	42906	0	8007	18302	16930	9609				
21	Gross Profit	92586	24082	17279	39494	36532	20735				
22	Automobile	11291	9151	2107	4816	4455	2529				
23	Insurance	16937	2408	3161	7225	6683	3793				
24	Professional Fees	5666	2408	3161	7225	6683	3793				

Another Slice of the PowerExcel model is shown in the image below. This Slices demonstrates another important fact: users can continue to employ standard Excel formatting. In sum, not only can a user create virtually limitless Slices, but these Slices retain all the capabilities inherent in Excel (formatting, graphs, even calculations outside the Slice area).

The screenshot shows the PowerExcel Studio interface with a PivotTable slice. The table displays financial data from January 2019 to December 2019, categorized by income and expense items. The data is summarized in the following table:

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019
Sales Income	40,350	37,324	35,306	48,420	36,315	30,263	26,228	23,605	26,228	31,836	30,343	27,640
Product Licensing Income	7,670	7,095	6,711	9,204	6,903	5,753	4,986	4,487	4,986	6,052	5,768	5,254
INCOME	48,020	44,419	42,018	57,624	43,218	36,015	31,213	28,092	31,213	37,888	36,111	32,894
Direct Costs	14,573	13,480	12,751	17,488	13,116	10,930	9,472	8,525	9,472	11,498	10,959	9,983
Job Expenses	-	-	-	-	-	-	-	-	-	-	-	-
COST OF GOOD SOLD	14,573	13,480	12,751	17,488	13,116	10,930	9,472	8,525	9,472	11,498	10,959	9,983
Gross Profit	33,447	30,938	29,266	40,136	30,102	25,085	21,741	19,566	21,741	26,390	25,152	22,911
Automobile	4,595	4,250	4,021	5,514	4,136	3,446	2,987	2,688	2,987	3,625	3,455	3,148
Insurance	5,953	5,506	5,208	7,143	5,357	4,464	3,869	3,482	3,869	4,697	4,476	4,077
Professional Fees	2,218	2,051	1,940	2,661	1,996	1,663	1,441	1,297	1,441	1,750	1,668	1,519
Repairs	11,605	10,735	10,154	13,926	10,445	8,704	7,543	6,789	7,543	9,156	8,727	7,949
Taxes	1,367	1,264	1,196	1,640	1,230	1,025	889	800	889	1,079	1,028	936
Utilities	1,191	1,101	1,042	1,429	1,071	893	774	696	774	939	895	815
Payroll Expenses	1,978	1,829	1,730	2,373	1,780	1,483	1,285	1,157	1,285	1,560	1,487	1,355
EXPENSE	28,905	26,737	25,292	34,686	26,015	21,679	18,788	16,909	18,788	22,806	21,737	19,800
Net Ordinary Income	4,542	4,201	3,974	5,450	4,088	3,407	2,952	2,657	2,952	3,584	3,416	3,111
Interest Income	1,918	1,774	1,678	2,301	1,726	1,438	1,246	1,122	1,246	1,513	1,442	1,313
Interest Expense	192	177	168	230	173	144	125	112	125	151	144	131
Net other income expense	1,726	1,596	1,510	2,071	1,553	1,294	1,122	1,010	1,122	1,362	1,298	1,182
Net Income	6,268	5,798	5,484	7,521	5,641	4,701	4,074	3,667	4,074	4,945	4,713	4,293

7. Entering Data in a PowerExcel Slice

This topic (once again, explained at full length in the PowerExcel User Manual) concerns how PowerExcel models are populated with data—actual figures or amounts. After all, in the main section of this manual (Section 2) we were concerned with creating the “meta data” of the model (Dimensions; Members; Member Attributes). The past few pages, showing PowerExcel Slice images, featured views that already have data in them. How does this data find its way into a model?

For present purposes, we will limit our discussion to the two simplest ways to enter figures.

First, it is possible to copy-paste numbers into a PowerExcel model. Consider a group of users at a firm mired in numerous linked, problematic spreadsheets, which are sent to staffers by email, for data entry of budget plan numbers... All the ‘Actuals’ can be organized for a bulk copy-paste into a PowerExcel Slice (or Slices), so that the resulting online business model will then be fully responsive for collaborative planning exercises. The (pre-PowerExcel) spreadsheet-only system would no longer carry the burden of both storing the numbers and performing all the cell-by-cell, repetitive calculations (This is why spreadsheets grow so large and take ever-longer to update!). Rather, the PowerExcel model would become the centralized store of both the data and model’s calculation logic (including business rules and KPIs).

Then—and here we come to our second simple means of entering data in a PowerOLAP model—each user could use the centralized model for budget entry: meaning, simply type numbers into their own PowerExcel Slice, which would function as a budget template. In sum, PowerExcel supports “write back.”

The following image shows an example Slice in which Dimensions have been reoriented to reflect 2019 ‘Actuals’ (to the left, in green shading) and a 2020 Budgeting template (on the right, in blue shading). That particular template would be used by the person responsible for **Direct Sales** of **Product 1** and the entity **Sample Co.** (as shown, circled, top right). Other staffers would have their own templates: once users typed in **Account** figures (for Sales Income, Product Licensing Income, etc.), the hierarchies (e.g., Income, for the previous two Members) would calculate dynamically. Indeed, the data calculate dynamically throughout the entire model, and will be visible to the management team ultimately responsible for corporate performance and the company’s strategic direction.

As such, a PowerExcel model becomes far more than a method to “disburden” spreadsheets—it also becomes a way to help decision makers chart what will likely be the course for a company’s success.

It sounds like a lot to ask of a business modeling application—but, indeed, PowerExcel delivers!

	A	B	C	D	E	F	G	H	I	J	K	L	
1	Database:	PowerExcel Panda Training				Database:	PowerExcel Panda Training						
2	Cube:	Month Year Financial Data				Cube:	Month Year Financial Data						
3	Dimensions:	Filter	MY Fin Data Me	Members	Amount	Dimensions:	Filter	MY Fin Data Mea	Members	Amount			
4		Filter	Entity	Members	Sample Co		Filter	Entity	Members	Sample Co			
5		Filter	Product - Servi	Members	Product 2		Filter	Product - Service	Members	Product 2			
6		Filter	Department	Members	Direct Sales		Filter	Department	Members	Direct Sales			
7		Column1	Version	Range	\$B\$12:\$E\$12		Column1	Version	Range	\$B\$12:\$E\$12			
8		Column2	Month Year	Range	\$B\$13:\$E\$13		Column2	Month Year	Range	\$B\$13:\$E\$13			
9		Row	Account	Range	\$A\$14:\$A\$33		Row	Account	Range	\$G\$14:\$G\$33			
10													
11	OLAPivotTable					OLAPivotTable							
12		Actual	Actual	Actual	Actual		Budget	Budget	Budget	Budget			
13		Jan 2019	Feb 2019	Mar 2019	Cum Mar 2019		Jan 2020	Feb 2020	Mar 2020	Cum Mar 2020			
14	Sales Income	3700	3423	3238	10360	Sales Income	0	0	0	0	0	0	
15	Product Licensing Income	740	685	648	2072	Product Licensing Income	0	0	0	0	0	0	
16	INCOME	4440	4107	3885	12432	INCOME	0	0	0	0	0	0	
17													
18	DirectCosts	1406	1301	1230	3937	DirectCosts	0	0	0	0	0	0	
19	Job Expenses	0	0	0	0	Job Expenses	0	0	0	0	0	0	
20	COSTOFGOODSSOLD	1406	1301	1230	3937	COSTOFGOODSSOLD	0	0	0	0	0	0	
21													
22	Gross Profit	3034	2806	2655	8495	Gross Profit	0	0	0	0	0	0	
23													
24	Automobile	370	342	324	1036	Automobile	0	0	0	0	0	0	
25	Insurance	555	513	486	1554	Insurance	0	0	0	0	0	0	
26	Professional Fees	185	171	162	518	Professional Fees	0	0	0	0	0	0	
27	Repairs	1110	1027	971	3108	Repairs	0	0	0	0	0	0	
28	Taxes	74	68	65	207	Taxes	0	0	0	0	0	0	
29	Utilities	111	103	97	311	Utilities	0	0	0	0	0	0	
30	Payroll Expenses	185	171	162	518	Payroll Expenses	0	0	0	0	0	0	
31	EXPENSE	2590	2396	2266	7252	EXPENSE	0	0	0	0	0	0	
32													
33	Net Ordinary Income	444	411	389	1243	Net Ordinary Income	0	0	0	0	0	0	
34													

Example Budget Planning Template—a Slice of a PowerExcel model