



## Power XL Best Practices

# Purpose of this document

The purpose of this document is to provide guidance to Power XL developers to get the best out of Power XL. This document will cover best practices, which enable a smooth UI/UX and a good Power XL performance.

# What is Power XL?

- Power XL (PXL) is a **writeback capable** Power BI visual
- It **utilizes Excel's grid** and all the broadly used Excel features and functions
- It is embedded into the **Power BI ecosystem**
- Power XL can be best described with the following equation:

$$Power\ XL = (Excel + Writeback) \times Power\ BI$$

# Filter on a few records

The screenshot shows the Power BI interface for 'Location Management'. At the top, there are navigation buttons: Back, Filter, Map View, Table View, Pick Rates, and Settings. Below these is a prompt: 'Select a location on the map, in order to drill through to the pick rate management page!'. The main area displays a Power XL report with a ribbon (Power XL, HOME, INSERT, FORMULAS, DATA, VIEW, SETTINGS) and a formula bar containing '=SUM(Data[CurrentSkuUnits])'. The report shows a table with columns: Location Name, Type, Country, State, and a Total value of 14,705,089. A dropdown menu for 'LocationId' is open, showing options 1 through 7, with 1, 2, and 3 selected.

While working on the Power XL report on your Power BI desktop, it is recommended to filter on a few records only. That way it is easier to maintain the Power XL table, it is quicker and easier to set formula references.

This close-up shows the Power XL report filtered to 3 records. The formula bar still contains '=SUM(Data[CurrentSkuUnits])'. The table below has columns: Lat., Long., and Current SKU Units. The data rows are:

Lat.	Long.	Current SKU Units
41.88	-87.63	2,718,782
34.05	-118.24	3,884,307
40.71	-74.01	8,102,000

As shown here, it is easier to select an entire column for a formula reference if filtered on 3 rows. This is better than referencing thousands of records in the data table.

# Help the users to prefilter the data

When building a report, it is recommended to use Power BI slicers instead of pulling in high volume of data to the front end.

For example, you can add some warning text, in case users select more than 5000 records at a time.

Add filters, so that users can easily filter for those records only, with which they would like to work.

The screenshot shows a Power BI report interface for 'Location Management'. At the top right is the 'Power ON' logo. Below it is a navigation bar with buttons for 'Back', 'Filter', 'Map View', 'Table View', 'Pick Rates', and 'Settings'. A 'Location Name' dropdown menu is set to 'All'. A red warning message reads: 'You are pulling too many records to the visual. In order to achieve better performance, apply filters and pull only that intersection of data, which you wish to edit or work on!'. Below the warning is a table with columns: Location Name, Type, Country, State, City, Lat., Long., and Current SKU Units. A 'Total:' box shows 60,864,816 records. The table lists various locations like Albuquerque (PL), Atlanta (PL), Austin (FA), etc.

Location Name	Type	Country	State	City	Lat.	Long.	Current SKU Units
Albuquerque (PL)	Plant	United States	New Mexico	Albuquerque	35.09	-106.61	10,000,000
Atlanta (PL)	Plant	United States	Georgia	Atlanta	33.75	-84.39	447,841
Austin (FA)	Factory	United States	Texas	Austin	30.27	-97.74	885,400
Baltimore (WH)	Warehouse	United States	Maryland	Baltimore	39.29	-76.61	622,104
Boston (PL)	Plant	United States	Massachusetts	Boston	42.36	-71.06	645,966
Charlotte (PL)	Plant	United States	North Carolina	Charlotte	35.23	-80.84	792,862
Chicago (FA)	Factory	United States	Illinois	Chicago	41.88	-87.63	2,718,782
Cleveland (PL)	Plant	United States	Ohio	Cleveland	41.50	-81.69	390,113
Colorado Springs (DC)	Distribution Center	United States	Colorado	Colorado Springs	38.83	-104.82	439,886
Columbus (FA)	Factory	United States	Ohio	Columbus	39.96	-83.00	822,553

# TableName[ColumnName] type of formula references

Power XL HOME INSERT FORMULAS DATA VIEW

I3 : X ✓ fx =SUM(Data[CurrentSKUUnits])

	G	H	I	J
1				
2				
3		Total:	=SUM(Data[CurrentSKUUnits])	
4				
5				
6		Lat.	Long.	Current SKU Units
7				
8		41.88	-87.63	2,718,782
9		34.05	-118.24	3,884,307
10		40.71	-74.01	8,102,000
11				

Whenever possible, use TableName[ColumnName] type of references.

Power XL HOME INSERT FORMULAS DATA

I3 : X ✓ fx =SUM(I8:I1000)

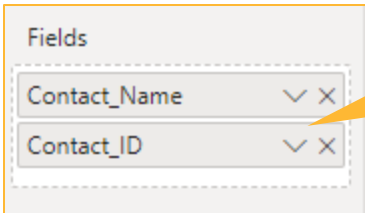
	G	H	I	J
1				
2				
3		Total:	14,705,089	
4				
5				
6		Lat.	Long.	Current SKU Units
7				
8		41.88	-87.63	2,718,782
9		34.05	-118.24	3,884,307
10		40.71	-74.01	8,102,000
11				

Avoid referencing on column and row positions, because those formulas are less flexible

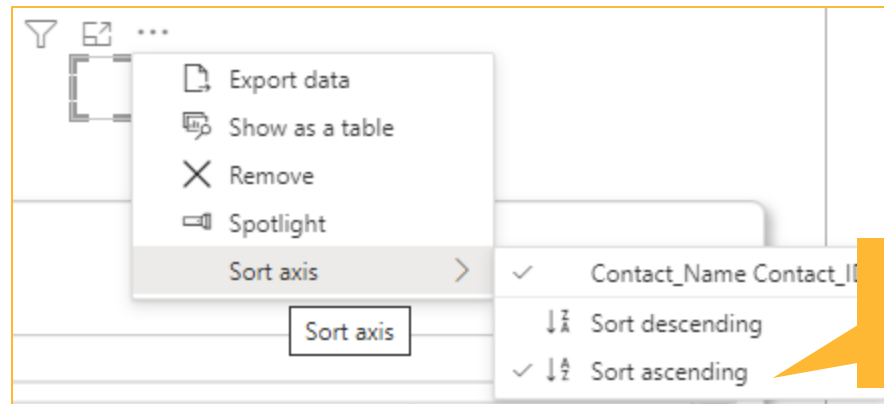
# Sort SmartFilter Alphabetically

ID	Opportunity ID	Opportunity Name	Opportunity Owner	Sales Account ID	Contact ID
26	OP00000026	Table Editor for Clie	Per Solli		
27	OP00000027	Partner-Absent-Min	Per Solli		
28	OP00000028	Partner-Accidental t	Per Solli		Acheloios Yur
29	OP00000029	Internal use-Odd An	Per Solli		Daire Joost
30	OP00000030	Partner-X Marks The	Per Solli		Evy Deepak M
31	OP00000031	Visual Planner-Esser	Per Solli		Farhad Ragn
32	OP00000032	Visual Planning-23R	Per Solli		Gudmund Su
33	OP00000033	Client-Spiritual Bein	Per Solli		Iokaste Emilia
34	OP00000034	Life Paths	Evan Friel		Linus Favruz
35	OP00000035	15-20 Users-Shadv	Per Solli		

It is recommended to sort selection columns alphabetically, otherwise it is hard to find items in it.

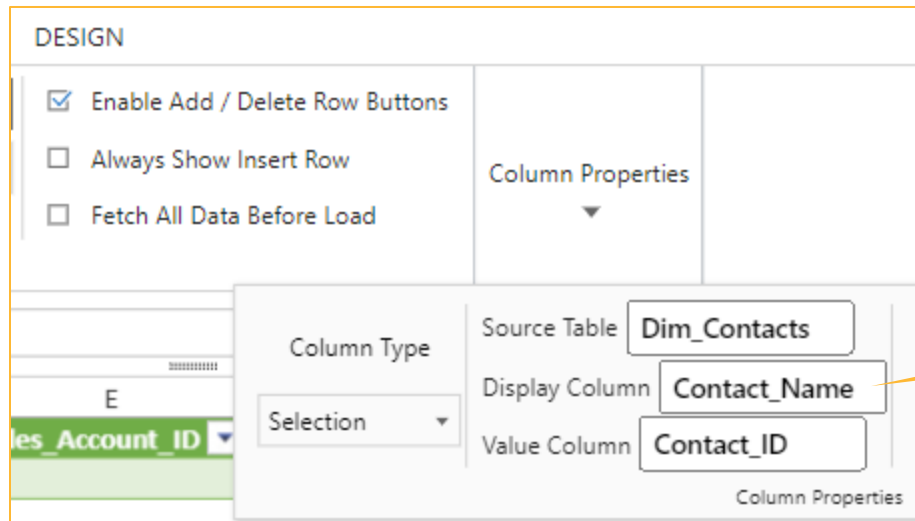


Make sure you have the SmartFilter visual with the display value first (Contact Name) and the ID value second (Contact ID)



Set the SmartFilter to be sorted alphabetically

# Avoid Ambiguity in Display and Value



Make sure that the display and value columns are in a 1:1 match and there is no ambiguity or duplication in them. Selection columns assume this 1:1 match between the display and value columns, hence this needs to be respected.

Ideally this is enforced on the database level by setting unique constraints on both the display and value columns, otherwise ambiguity can arise.

```
ALTER TABLE [dbo].[Dim_Contacts] ADD CONSTRAINT [UQ__Contact_Name] UNIQUE NONCLUSTERED
(
  [Contact_Name] ASC
)WITH (STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ONLINE = OFF, OPTIMIZE_FOR_SEQUENTIAL_KEY = OFF) ON [PRIMARY]
GO
```

# Use Icons for Dropdowns

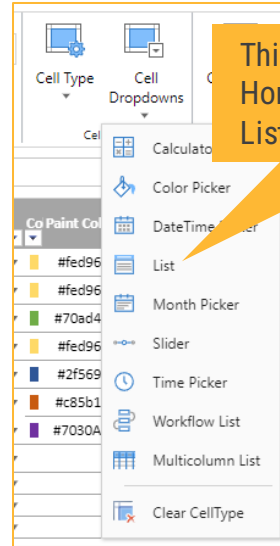
To achieve a more visually appealing look and feel, it is recommended to use icons in dropdowns, as seen in the example below

Due Date	Design
0 18 Mar. 2022	Waiting for Approval
0 19 Apr. 2022	Waiting for Approval
0 15 Oct. 2021	Waiting for Approval
0 22 Sep. 2021	Delayed
8 31 Aug. 2021	Working on it
0 20 Aug. 2021	Done
0 19 May. 2022	
04 Au	

Reason Code

Other

- Regulatory
- Strategic
- Contract
- Other



Configuration panel for the List command:

- Caption: [Text Box]
- BackColor: [Color Picker]
- Hover BackColor: [Color Picker]
- Image Type: Dropdown
- Visibility: Always
- Command: List

Then clicking the 3 dots

List dialog box configuration:

- Multi-select:
- Value Type: String
- Root
  - Waiting for Approval
  - Delayed
  - Working on it
  - Done
- Has Children:
- Text: Waiting for Appro
- Value: Waiting for Appro
- Icon: [Select File] [Blue Circle Icon]

Finally browsing an icon to the given list item

# Form Mode

Unlike in Excel, in Power XL users can use circular references. The following form references the original data from the blue data sheet to the form and then referencing that back to the blue data sheet for writeback

**Voting Form**

UPC Code: TSKU00000004    SKU Name: Raspberry

Vote List: National Keep

Action List: Under Consideration

Reason Code: Other

Cross Functional Comments

Power XL    HOME    INSERT    FORMULAS    DATA    VIEW    SETTINGS

C10    =IF(Data!F2=0,"",Data!F2)

	A	B	C	D	E
7					
8					
9			Vote List		Cross Functional Comm
10			National Keep		
11					

The form's C10 cell is getting the data from Data!F2

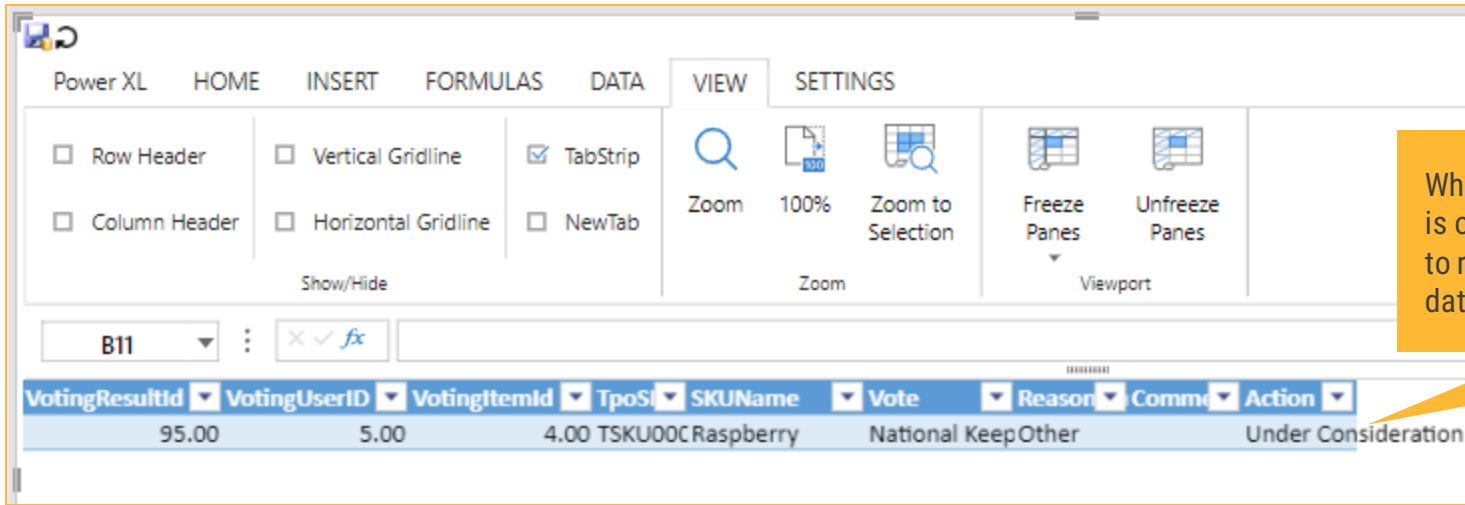
Power XL    HOME    INSERT    FORMULAS    DATA    VIEW    SETTINGS    DESIGN

F2    =Form!C10

	A	B	C	D	E	F	G
1	VotingResultId	VotingUserID	VotingItemId	TpoSl	SKUName	Vote	ReasonCode
2	95.00	5.00	4.00	TSKU00C	Raspberry	National Keep	Other
3							
4							

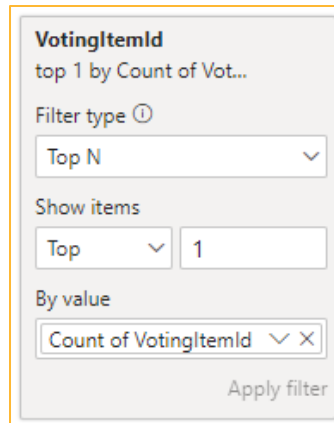
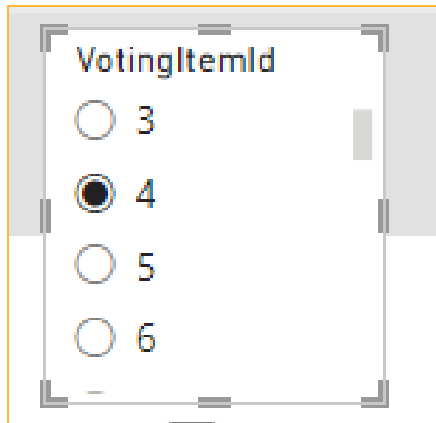
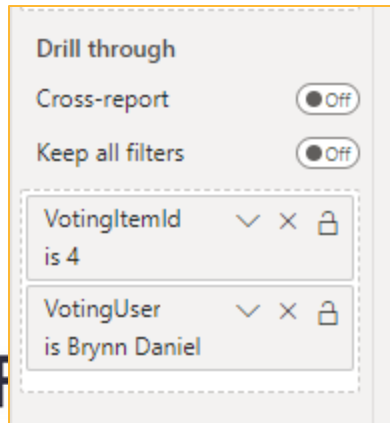
Data!F2 is pulling the data back from Form!C10, hence once the users change the original value on the form, it is referenced back to the writeback capable blue table area of the Power XL grid

# Form Mode

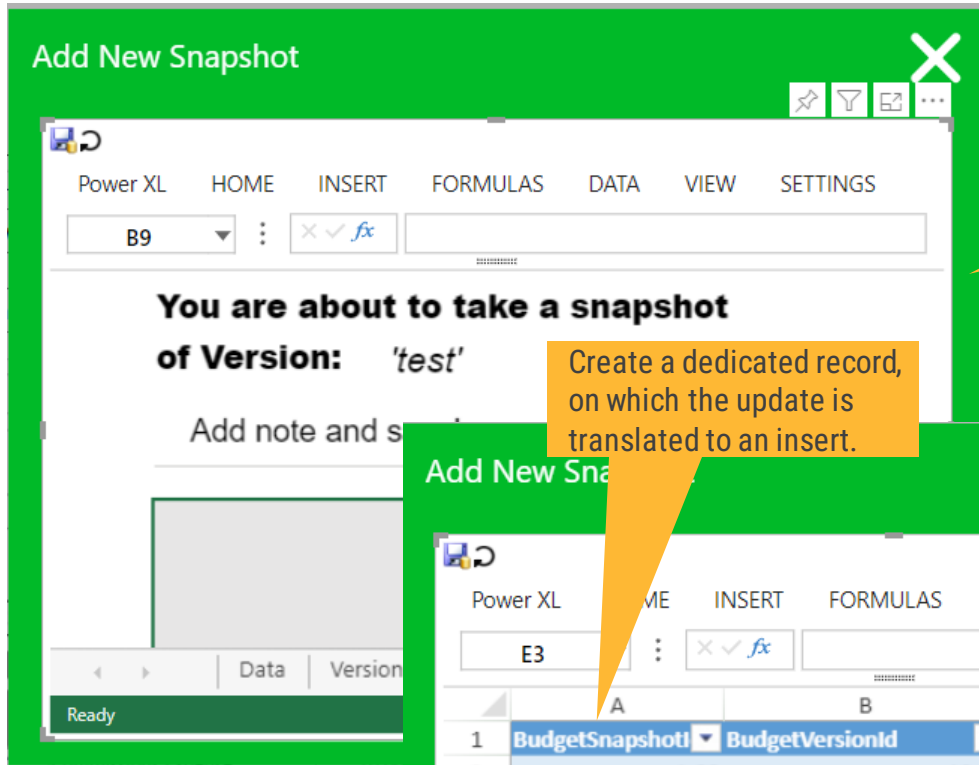


When using Power XL for form use cases, make sure that there is only 1 record in the Power XL grid, otherwise it is not possible to reference values properly between the form sheet and the data sheet

This can be enforced in multiple ways, either by a drill through based approach, a single selection slicer or a top 1 filter on the visual

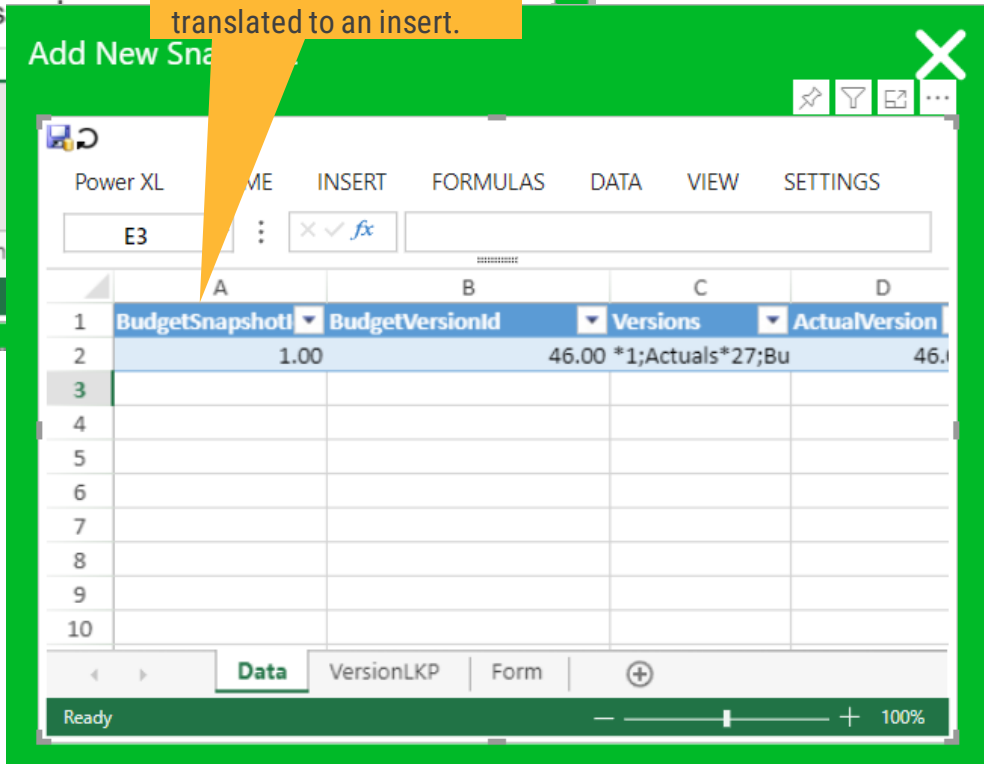


# Insert New Record in Form Mode



When using form mode for new data entry, instead of true insert, you can use an insert instead of update.

Create a dedicated record, on which the update is translated to an insert.



```
CREATE trigger [dbo].[trg_HandleNew_BudgetSnapshot] on [dbo].[BudgetSnapshot]
after update
as
begin

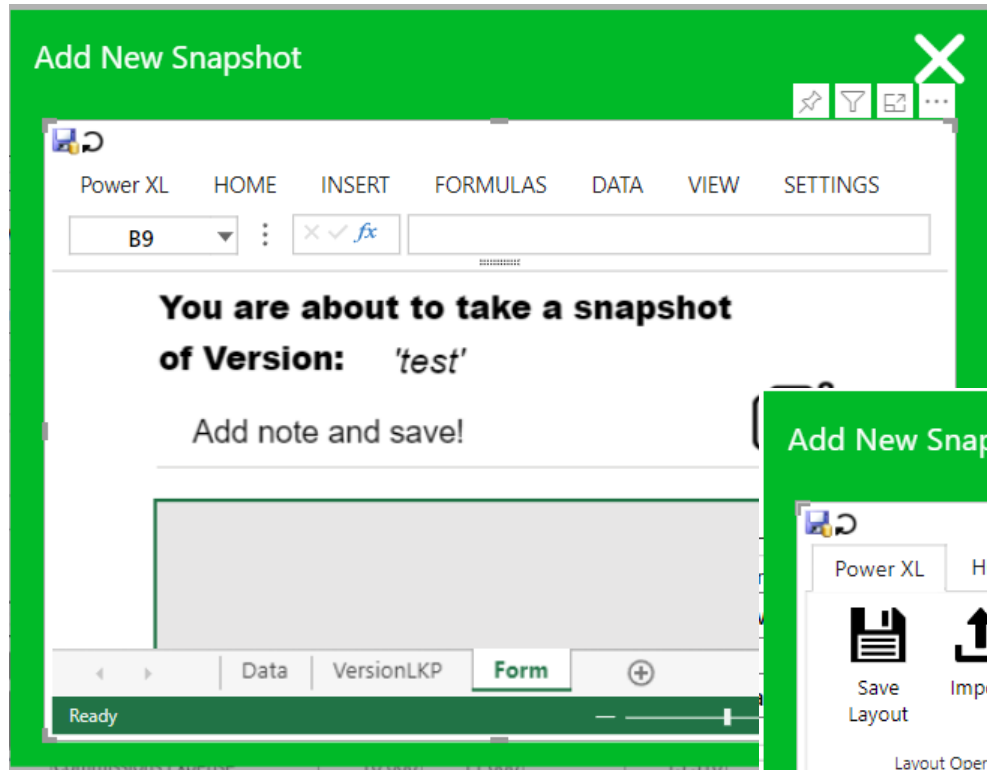
declare
@BudgetSnapshotId int = (select [BudgetSnapshotId] from inserted),
@BudgetVersionId int = (select [BudgetVersionId] from inserted),
@CreatedAt datetime = dateadd(ms,-datepart(ms,getdate()),getdate()),
@CreatedBy nvarchar(50) = coalesce(cast(session_context('user_name') as varchar(max)),system_user),
@NewBudgetSnapshotId int

if @BudgetSnapshotId=1
begin
insert into [dbo].[BudgetSnapshot]
(
[BudgetVersionId],
[SnapshotNote],
[CreatedAt],
[CreatedBy]
)
select
[BudgetVersionId],
[SnapshotNote],
@CreatedAt,
@CreatedBy
from [dbo].[BudgetSnapshot]
where
[BudgetSnapshotId]=1

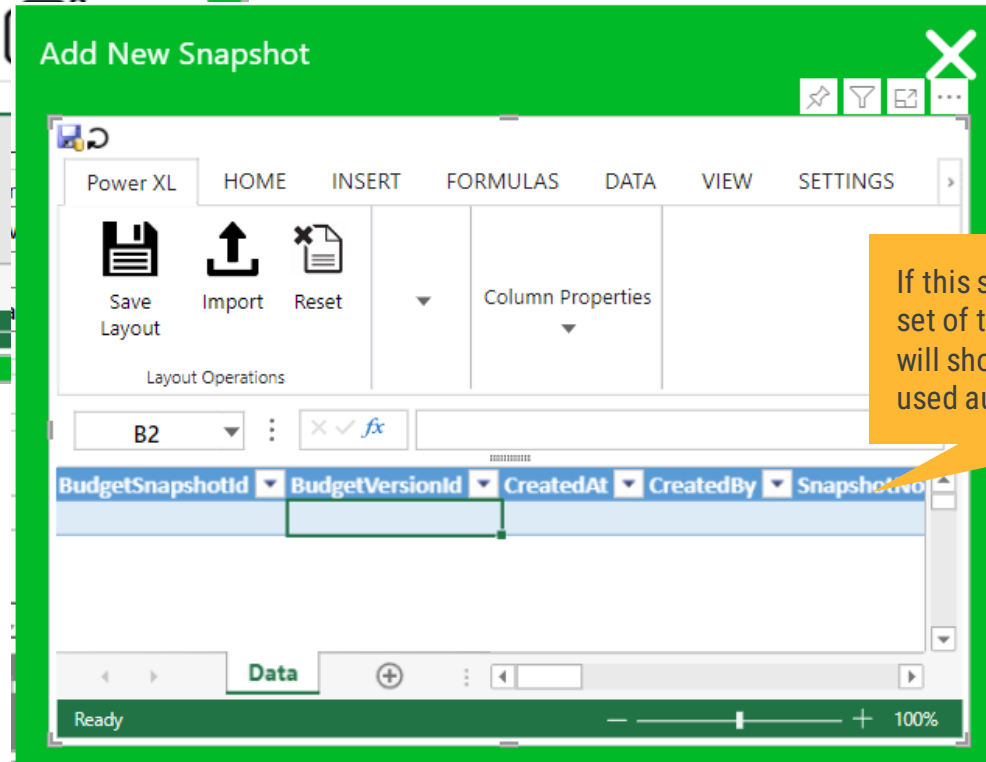
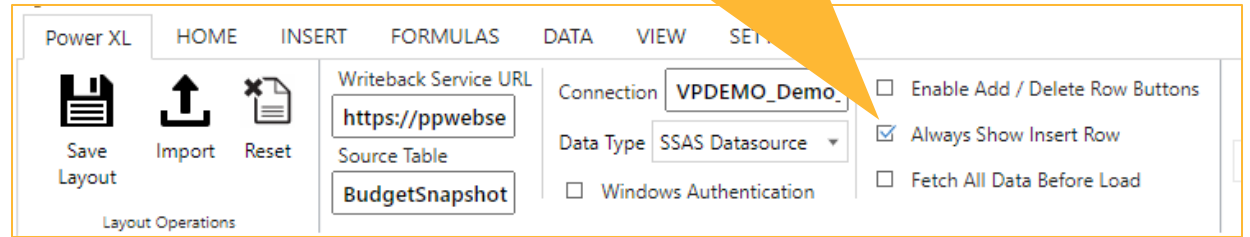
set @NewBudgetSnapshotId = IDENT_CURRENT('BudgetSnapshot')
```

Every time this record is updated, translate that update operation to an insert operation with a trigger

# Insert New Record in Form Mode



Alternatively you can use the "Always show insert row" feature and filter out all records from the Power XL table



If this setting is enabled and the result set of the Power XL table is empty, it will show an extra row, which can be used automatically for data entry

# Dynamic Dropdown in Form Mode

At this point, using the dynamic dropdown list in form mode can only be achieved with some DAX and Excel formula tricks

As the first step, create a DAX measure, which concatenates the key and value pairs in a structured format, for example with a | delimiter

**Add New Budget Version**

Version Name \*\*

Version Category \*

Version Type \*

Version Status \*

Source Version (Optional)

- Actuals
- Budget
- Scenario Version (Optimistic
- Optimistic Budget
- What If 2023
- 2023 Sales Budget

\* field is mandatory  
\*\* filed is mandatory and must be unique

Ready

|1|Apple|2|Orange|3|Banana|4|Pear|5|Pinapple|

# Dynamic Dropdown in Form Mode

Pass this measure to the Power XL visual and create an extra sheet, where you extract the key value pairs with some text parsing formulas

Start	Mid	End	ID	Value	
	1	3	9	1	Apple
	9	11	18	2	Orange
	18	20	27	3	Banana
	27	29	34	4	Pear
	34	36	45	5	Pinapple
	45				

Formulas shown in callouts:

- `=IFERROR(FIND("|",Ttxt,B7+1),"")`
- `=IFERROR(FIND("|",Ttxt,C7+1),"")`
- `=IFERROR(MID(Ttxt,B7+1,C7-B7-1),"")`
- `=IFERROR(MID(Ttxt,C7+1,D7-C7-1),"")`

Then create some Excel functions, which are splitting the information encapsulated in that single string

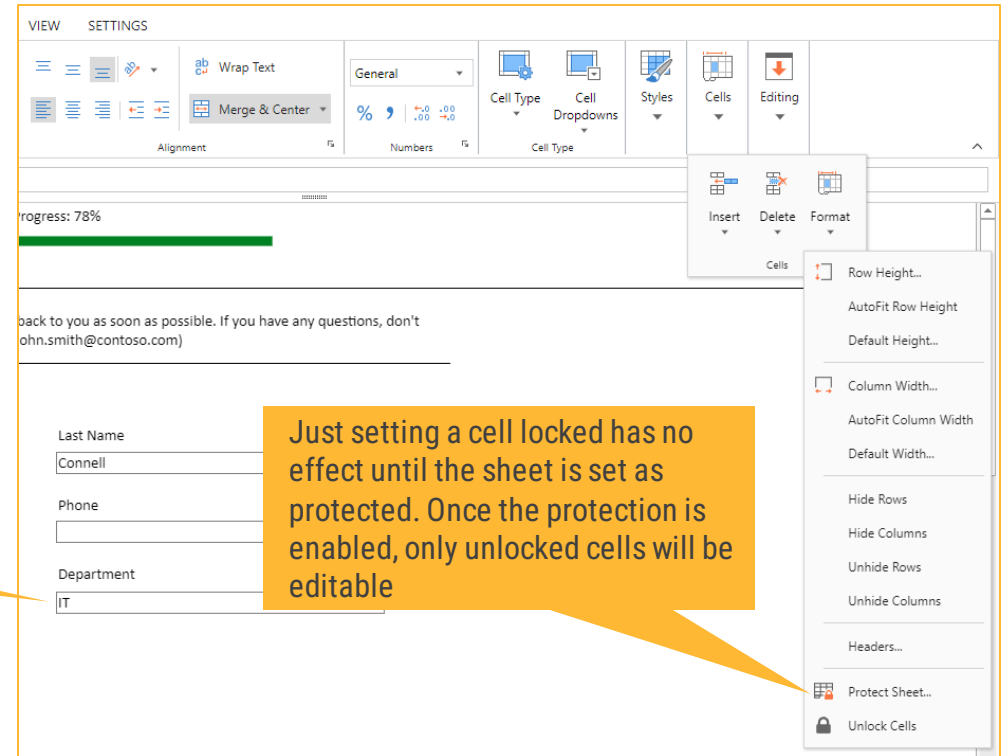
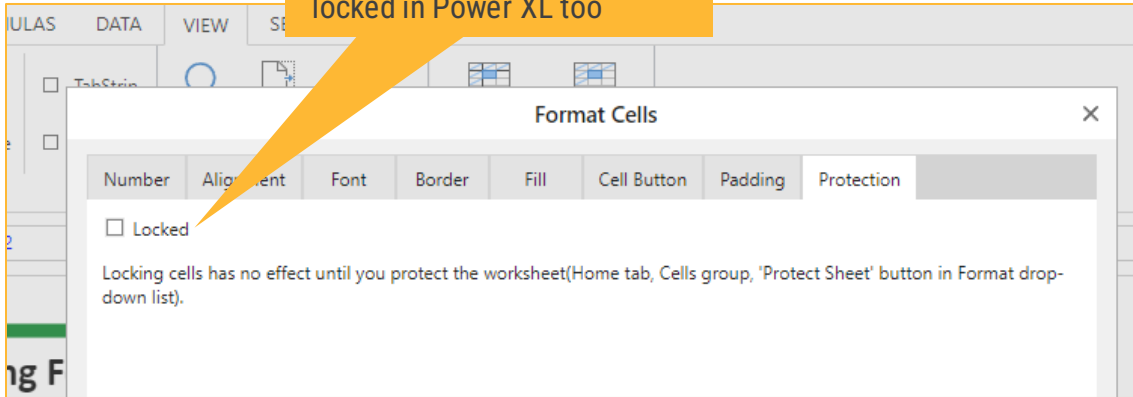
Finally pass this range of values to a list validation on the form

Data Validation dialog box settings:

- Settings: Input Message, Error Alert, Highlight Style
- Validation Criteria: Allow: List, Data: between, Source: =VersionLKP!\$F\$2:\$F\$15
- Ignore Blank:
- In-cell dropdown:

# Sheet Protection

Similarly, as in Excel, users can set a cell as locked or not locked in Power XL too

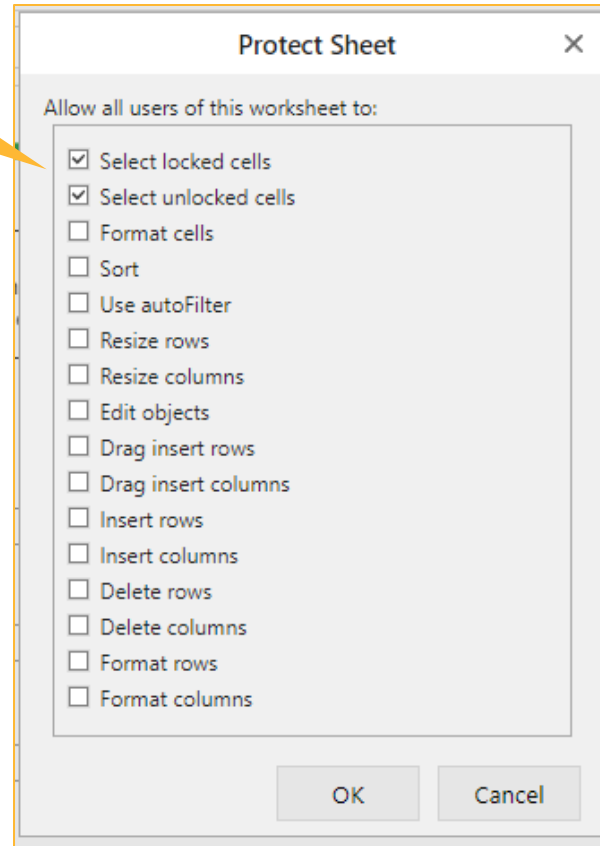


It is recommended to set only those cells as unlocked, which we want the users to edit, especially in form-based use cases

Just setting a cell locked has no effect until the sheet is set as protected. Once the protection is enabled, only unlocked cells will be editable

# Sheet Protection

In the protect sheet menu users can further define which actions they allow in protected mode



# Sheet Protection

The screenshot shows the Power BI Desktop ribbon with the 'DESIGN' tab selected. The 'Column Properties' task pane is open, showing settings for a column named 'Attribute1'. The 'Read only' checkbox is checked, and a yellow callout box points to it with the text: 'Alternatively, the protection can be driven by the "Read Only" property of the data table. However, this can only be set on the blue data table'.

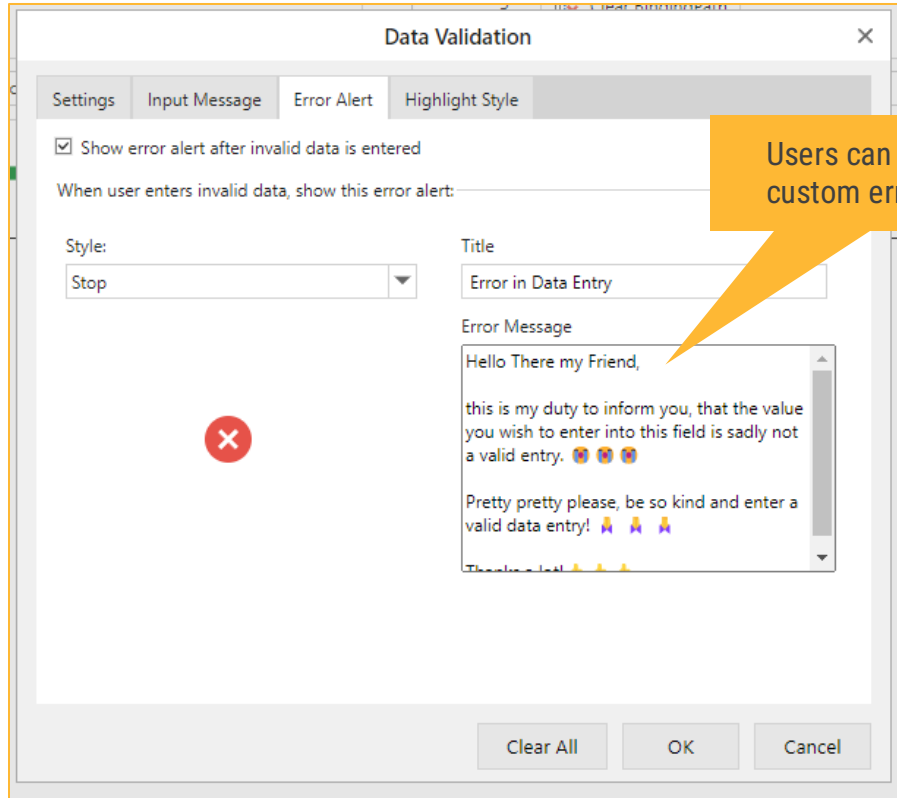
Index	Attribute1	Value3
10032	10,031.00 A46	853.36
10033	10,032.00 A10	517.41

# Data Validation

The screenshot displays the Microsoft Excel interface with the 'Data' tab selected. The 'Data Validation' dialog box is open, showing the 'Settings' tab. The 'Allow' dropdown is set to 'Whole number', and the 'Ignore Blanks' checkbox is checked. The background spreadsheet shows an 'Employee Onboarding Form' with fields for 'First Name' (Sinka), 'Email' (greg.sinka@poweronbi.com), and 'Job Position' (Develoepr). Below the form is an 'Equipment Preferences' section with radio buttons for 'Mac' and 'Windows' (selected), and a question 'Do you need a mouse?' with 'Yes' selected.

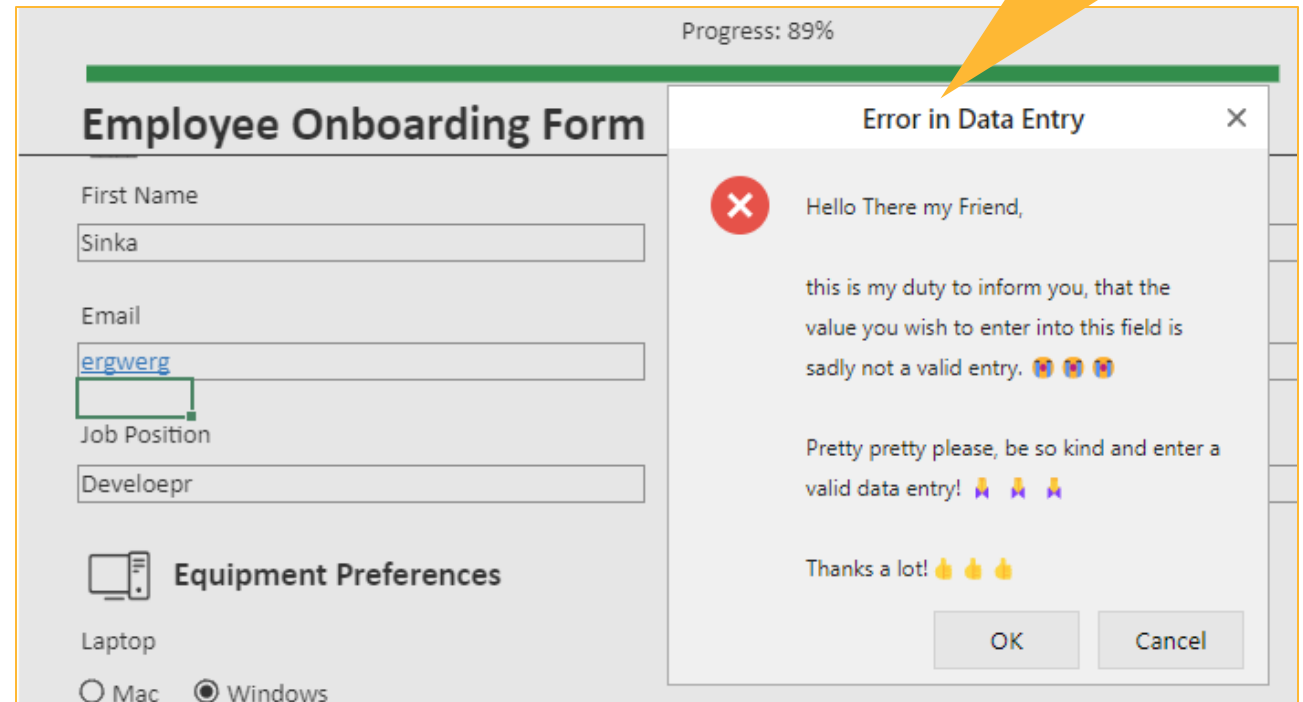
With Power XL, users can set up validation rules on any cell, such as restrict data type to a whole number, decimal, date or a certain text length

# Data Validation



Users can also define custom error alerts

If a data validation rule is violated, this error message will be shown to the user



# Data Validation

The screenshot displays the Microsoft Excel interface with the 'DATA' ribbon selected. The 'Data Validation' task pane is open, showing the 'Settings' tab. The 'Validation Criteria' section is configured as follows:

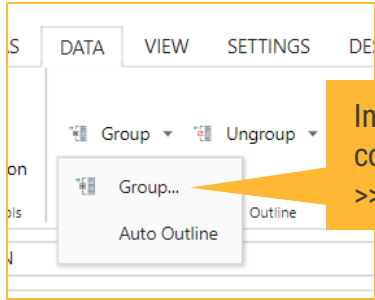
- Allow:** Custom
- Ignore Blank:**
- Data:** between
- Formula:** `=NOT(ISERR(SEARCH("@",Y19)+SEARCH(".",Y19,SEARCH("@",Y19))))`

The background shows a form titled 'Employee Onboarding Form' with the following fields:

- First Name: Sinka
- Email: greg.sinka@poweronbi.com
- Job Position: Develoepr

Users can even set up custom formula-based validation. Any kind of custom rules can be implemented, such as to check if the field is a valid e-mail address or follows a certain pattern

# Collapse and Expand Columns



In Power XL users can set certain columns as collapsible, under the Data >> Group option

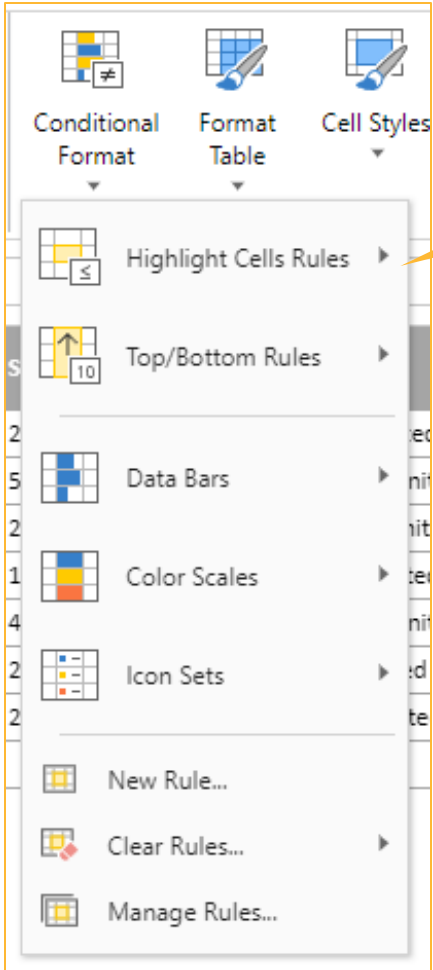
Once set as grouped, report users can expand and collapse the columns. Thus, they can align the grid to their needs

Edit the employee data in the grid!

Employee Name	Cost Center	Job Sub-Activity	Employee Type	GPID	Leadership Group/Level	Position Title	Line Name	Crew/Shift	Area	Packaging Roles	Processing Roles
Alanna Dickson	PRODUCTION	Processing	Hourly	5400022	L04	Buyer	LN001	5	Other		
Livia Shields	PRODUCTION	Processing	Hourly	5400023	L04	Analyst	LN020	5	Other		
Omari Carter	PRODUCTION	Processing	Hourly	5400024	L04	General Assistant	LN020	2	Sanitation		

Employee Name	Line Name	Crew/Shift	Area	Packaging Roles	Processing Roles	Maintenance	Quality	Sanitation	Other
Alanna Dickson	LN001	5	Other						
Livia Shields	LN020	5	Other						
Omari Carter	LN020	2	Sanitation						

# Conditional Formatting



It is highly recommended to enrich the data grid with conditional formatting. Power XL provides a variety of conditional formatting options, such as background color, font color, data bars, icons and more.

The below example shows the same grid with and without conditional formatting. With conditional formatting the grid looks more visually appealing and easier to understand.

C Product	Quantity	Due Date	Design	Build	Ship	Progress	Paint Color	Order Link	Ship To
Personalised Noteboo...	1,000	18 Mar. 2022	Waiting for Approval	Delayed	Working on it	34%	#7030A0	<a href="#">AUG0001</a>	235 Bowery, New York, NY 10002, United St...
Leather Journal	500	18 Nov. 2021	Working on it	Delayed	Delayed	44%	#3a5823	<a href="#">AUG0002</a>	558 Broadway, New York, NY 10012, United...
Vintage Necklace	800	08 Nov. 2021	Done	Done	Working on it	67%	#abd08f	<a href="#">AUG0003</a>	215 Centre St, New York, NY 10013, United ...
Scandinavian Print	800	20 Oct. 2021	Done	Delayed	Delayed	54%	#f4b185	<a href="#">AUG0004</a>	175 5th Ave, New York, NY 10010, United S...
Blue Wall Art	1,000	01 Oct. 2021	Delayed	Waiting for Approval	Waiting for Approval	15%	#2f5697	<a href="#">AUG0005</a>	475 Broadway, New York, NY 10013, United...
Christmas Tree Kit.	500	22 Sep. 2021	Done	Waiting for Approval	Working on it	32%	#00B050	<a href="#">AUG0006</a>	29 E 4th St, New York, NY 10003, United Sta...
Miniature Dollhouse	800	18 Aug. 2021	Working on it	Working on it	Delayed	78%	#C00000	<a href="#">AUG0007</a>	252 1st Ave., New York, NY 10009, United S...
New item...									

C Product	Quantity	Due Date	Design	Build	Ship	Progress	Paint Color	Order Link	Ship To
Personalised Noteboo...	1,000	18 Mar. 2022	Waiting for Approval	Delayed	Working on it	34%	#7030A0	<a href="#">AUG0001</a>	235 Bowery, New York, NY 10002, United St...
Leather Journal	500	18 Nov. 2021	Working on it	Delayed	Delayed	44%	#3a5823	<a href="#">AUG0002</a>	558 Broadway, New York, NY 10012, United...
Vintage Necklace	800	08 Nov. 2021	Done	Done	Working on it	67%	#abd08f	<a href="#">AUG0003</a>	215 Centre St, New York, NY 10013, United ...
Scandinavian Print	800	20 Oct. 2021	Done	Delayed	Delayed	54%	#f4b185	<a href="#">AUG0004</a>	175 5th Ave, New York, NY 10010, United S...
Blue Wall Art	1,000	01 Oct. 2021	Delayed	Waiting for Approval	Waiting for Approval	15%	#2f5697	<a href="#">AUG0005</a>	475 Broadway, New York, NY 10013, United...
Christmas Tree Kit.	500	22 Sep. 2021	Done	Waiting for Approval	Working on it	32%	#00B050	<a href="#">AUG0006</a>	29 E 4th St, New York, NY 10003, United Sta...
Miniature Dollhouse	800	18 Aug. 2021	Working on it	Working on it	Delayed	78%	#C00000	<a href="#">AUG0007</a>	252 1st Ave., New York, NY 10009, United S...
New item...									

# Client Side Calculations

Power XL supports client-side calculations. Users can add their own calculations on the flight, while using the report

For some use cases, it is recommended to pull in some values as measures, which will serve as a baseline for calculations. Users then can reference this measure value (original value) and change it using the client-side calculations.

	A	B	C	D	E
1					
2			Current	New	Delta
3		Total	77,620	62,096	-20%
4					
5					
6					
7					
8	Supplier Name	Industry	Current Monthly Capacity	New Monthly Capacity	Delta
9					
10	Supplier1	Metals	12,626	=C10*0.8	-20%
11	Supplier2	Plastics	7,702	6,162	-20%
12	Supplier3	Engineering Services	12,353	9,882	-20%
13	Supplier4	Metals	12,626	10,101	-20%
14	Supplier5	Plastics	10,176	8,141	-20%
15	Supplier6	Engineering Services	10,176	8,141	-20%
16	Supplier7	Plastics	11,961	9,569	-20%

Current capacity is pulled in as a measure (not writeback capable)

New capacity is the writeback capable column

Users can use formulas in the front-end to change the current value. For example, multiply the current capacity by 80% and calculate the new capacity value.

# Client Side Calculations

It is recommended to add further client-side calculations to the report. This will give the users instant feedback, so they can see the effects of the changes before values are saved

Show totals

Add delta calculations

Show some values on a bar chart on top of the data table

Use a pie chart to show values by certain attributes

Customer	REP	ASM	Customer Name	Item	Item Description	Production Type	Price Rule	Annual Quantity	Current Price	Current Sales	Suggested New Price	Suggested New Sales	Sales Change w/ Suggested Price (Opportunity)	Accept New Price	Adjusted New Price	Adjusted New Sales	Sales Change w/ Adjusted Price (Opportunity)	Reason for Adj
Name009	Conner	Linds	24307	5 Bread	ABC East	35A	36	\$849	\$30,562	\$934	\$33,618	\$3,056	N	\$900	\$32,400	\$1,838		
Name014	Conner	Linds	65860	6 Icecream	ABC East	13A	20	\$817	\$16,339	\$899	\$17,973	\$1,634	Y		\$17,973	\$1,634		
Name005	Conner	Linds	19116	7 Bed	ABC East	14A	12	\$1,204	\$14,454	\$1,325	\$15,899	\$1,445			\$15,899	\$1,445		
Name009	Conner	Linds	23886	8 Mobil AC	ABC East	28A	20	\$618	\$12,360	\$680	\$13,596	\$1,236	N	\$623	\$12,460	\$100		
Name004	Ishaq	Linds	57578	7 Bed	ABC East	14A	10	\$1,204	\$12,045	\$1,325	\$13,249	\$1,204			\$13,249	\$1,204		
Name005	Conner	Linds	20256	7 Bed	ABC East	13A	10	\$1,204	\$12,045	\$1,325	\$13,249	\$1,204	Y	\$1,300	\$13,000	\$955		
Name004	Ishaq	Linds	48593	7 Bed	ABC East	16A	10	\$1,204	\$12,045	\$1,325	\$13,249	\$1,204			\$13,249	\$1,204		
Name005	Conner	Linds	17774	5 Bread	ABC East	15A	16	\$750	\$11,998	\$825	\$13,198	\$1,200	Y		\$13,198	\$1,200		
Name004	Ishaq	Linds	50503	5 Bread	ABC East	13A	16	\$750	\$11,998	\$825	\$13,198	\$1,200	N	\$800	\$12,800	\$802		

Sales	Δ	%
Current: \$408,243	-	-
Suggested: \$449,067	\$40,824	10.0%
Adjusted: \$449,680	\$41,437	10.1%
Adjusted (not saved): \$449,680	\$41,437	10.1%

Adjusted New Sales:		
\$449,680	0.0%	\$0
\$449,680		

Scenario	Value	Percentage
Suggested	10.0%	10.0%
Adjusted	10.1%	10.1%
Adjusted (not saved)	10.1%	10.1%

Category	Count	Percentage
Accepted (Y)	9	41%
Not Accepted (N)	13	59%

# Default and Computed Values

Currently Power XL doesn't have an out of the box way to utilize default values. With some formula tricks the default value behavior can be achieved

The screenshot shows the Power XL interface with a table of budget versions. The formula bar displays the DAX measure: `=IF(A2="",NOW(),F2)`. The table has the following data:

	A	C	D	E	F	G
1	BudgetVersionId	VersionStatus	VersionType	VersionCategory	OriginalCreatedAt	CreatedAt
2	61	In Progress	Forecast	Local Plan	3/2/2023 14:41:52	3/2/23 2:41 PM
3	60	In Progress			3/2/2023 14:41:52	3/2/23 2:41 PM
4	59	Sent for Approval			3/2/2023 14:41:52	3/2/23 2:41 PM
5	58	In Progress			3/2/2023 14:41:52	3/2/23 2:41 PM
6	57	Rejected			3/2/2023 14:41:52	3/2/23 2:41 PM
7	56	In Progress			3/2/2023 14:41:52	3/2/23 2:41 PM
8	55	Sent for Approval	Budget	Local Plan	3/2/2023 14:41:52	3/2/23 2:41 PM
9	54	In Progress	Budget	What If	3/2/2023 14:41:52	3/2/23 2:41 PM
10	53	In Progress	Forecast	Local Plan	3/2/2023 14:41:52	3/2/23 2:41 PM
11	52	In Progress	Budget	What If	3/2/2023 14:41:52	3/2/23 2:41 PM

Pull in the "Original" Created At information with a DAX measure. You can hide the column later on, you only need this to determine if there is already a created at information for this record or not

For the "real" Created At column use a formula.

`=IF(A2="",NOW(),F2)`

By using this formula, if the BudgetVersionId is empty (i.e.: if the item is a new item), then the Created At value will be set to NOW(). Otherwise it will just take the value from the OriginalCreatedAt column, so technically that will be unchanged

# Default and Computed Values

In other scenarios we might want to default all the values in a column to a given value

Let's say, that we don't want to select from the dropdown the Budget Version for every new Budget Line, but we want it to be defaulted to a given Budget Version (let's say we only have 1 Budget Version selected at the time)

In order to achieve that we added the "IdBudgetVersion" as a new column coming from a DAX measure. The column has the same values in each row, we use that only to seed the default value

We then use this column in a formula in the BudgetVersionId column:

```
=IFERROR(VLOOKUP("*",[IdBudgetVersion],1,FALSE),"
```

This was every time a new Budget Line is added, it will be defaulted to the value defined in IdBudgetVersion. Please note, that **this approach only works, if you already have at least one Budget Line associated with the given Budget Version**

BudgetVersionId	IdBudgetVersion	BusinessUnitId	DepartmentId	LegalEnt	Expense	ExpenseCatego
Demo 20230215	Demo 20230215	Analytics 1	Data Analytics	EN101	Opex	Non-Cap & ...
Demo 20230215	Demo 20230215	Analytics 1	Data Analytics	EN101	Opex	Non-Cap & ...
Demo 20230215	Demo 20230215	Analytics 1	Data Analytics	EN101	Opex	Non-Cap & ...
Demo 20230215	Demo 20230215	Analytics 1	Data Analytics	EN101	Opex	Non-Cap & ...
Demo 20230215	Demo 20230215	Analytics 1	Data Analytics	EN101	Opex	Non-Cap & ...
Demo 20230215	Demo 20230215	Analytics 1	Data Analytics	EN101	Opex	Non-Cap & ...
Demo 20230215	Demo 20230215	Analytics 1	Data Analytics	EN101	Opex	Non-Cap & ...

# Default and Computed Values

On the previous sides we showed how to utilize default values in Power XL. Computed values as of now are not yet possible in Power XL

In order to achieve computed value behavior, our suggestion is to utilize triggers. The below example shows a trigger, which runs after update and insert and sets the UpdatedAt and UpdatedBy fields respectively

This trigger based calculation can be applied for the default value as well, in that case the trigger should run only after insert

```
CREATE trigger [dbo].[trg_SetLogs] on [dbo].[BudgetVersion]
after update, insert
as
BEGIN

DECLARE
@CreatedAtTimeStampDATETIME= getdate(),
@CreatedByUserNVARCHAR(255)= coalesce(cast(session_context(N'user_name') as varchar(max)),system_user)

UPDATE
[dbo].[BudgetVersion]
SET
    UpdatedAt = @CreatedAtTimeStamp
,UpdatedBy = @CreatedByUser
WHERE
[BudgetVersionId] in (SELECT BudgetVersionId FROM INSERTED)

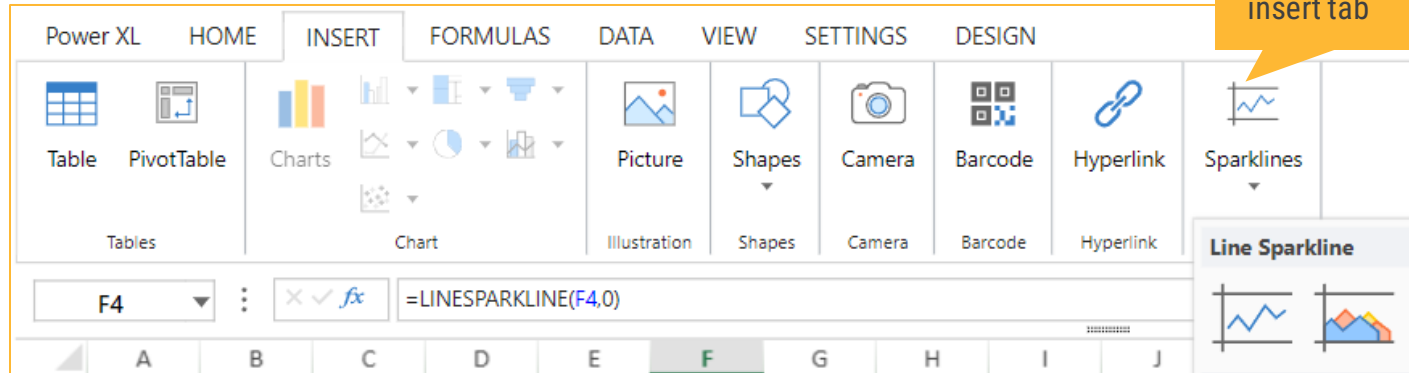
END
GO
```

# Sparklines

Power XL provides a variety of sparklines. They can be added as excel formulas; however, they will be rendered as small charts inside the cell

Sparklines can be added using the insert tab

Alternatively, sparklines can be written as a formula directly in the cell. A tooltip helps to define the attributes of the sparkline



=LINESPARKLINE(F4,0)

LINESPARKLINE(data, dataOrientation, dateAxisData, dateAxisOrientation, setting)

Summary  
This function returns a data set used for representing a line sparkline

Some sparklines have an additional setting property, where more settings can be defined in the JSON format

=COLUMNSPARKLINE(U12:AF12,1,"{seriesColor:#B8D6A3,showNegative:1,negativeSeriesColor:#FF0000,displayEmptyCellsAs:0,maxAxisType:0,minAxisType:0}")

COLUMNSPARKLINE(data, dataOrientation, dateAxisData, dateAxisOrientation, setting)

Summary  
This function returns a data set used for representing a column sparkline

	Aug	Sep	Oct	Nov	Dec	Total	Trend
0	19,487,171	21,435,888	23,579,477	25,937,425	28,531,167	↑ 213,842,838	
0	5,712,560	5,769,686	5,827,382	5,885,656	5,944,513	↓ 69,361,426	
0	13,774,611	15,666,203	17,752,094	20,051,768	22,586,654	↑ 144,481,411	
0	700,000	700,000	500,000	500,000	500,000	↓ 9,500,000	

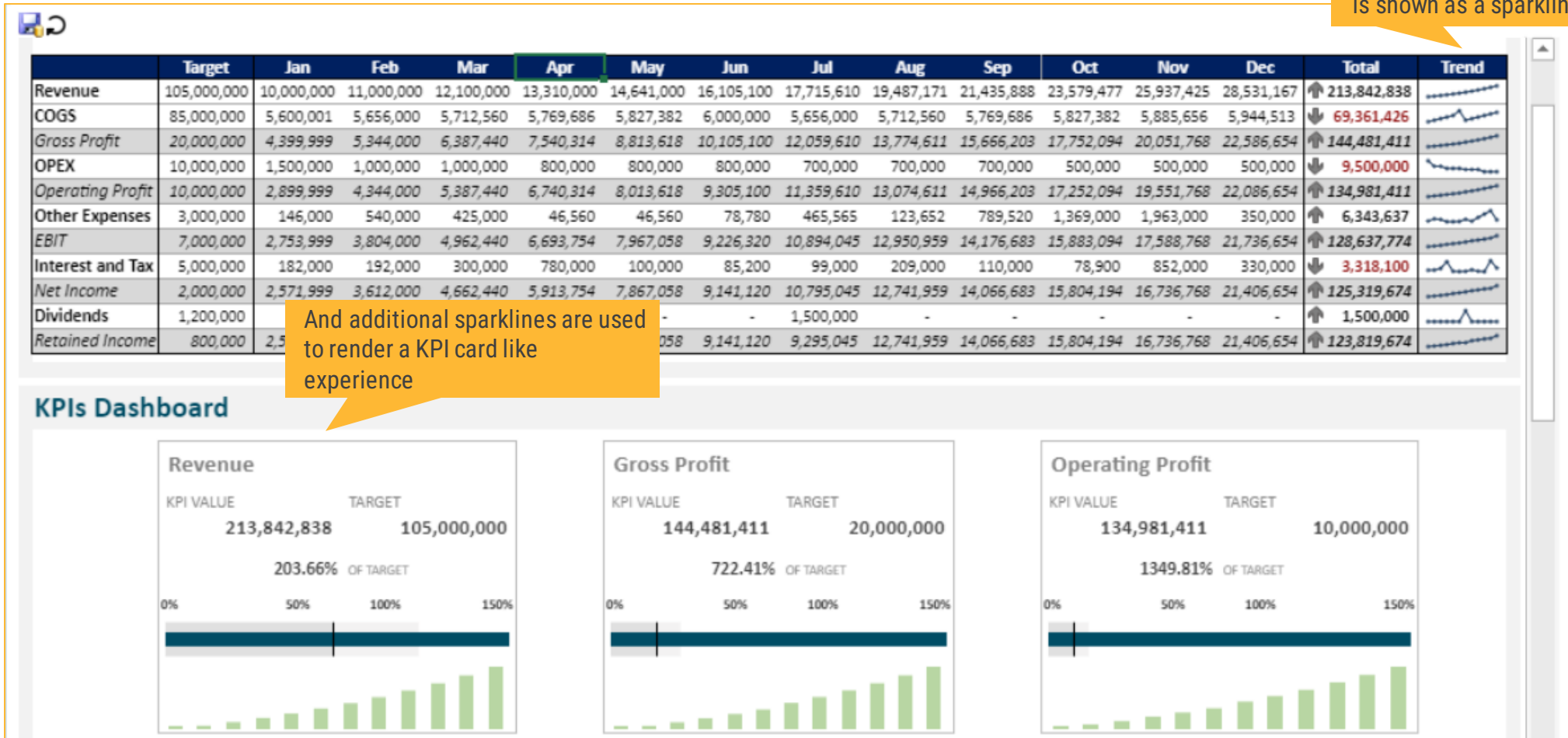
# Sparklines

In this example a sparkline is added to a data table, which helps users to understand the distribution of data

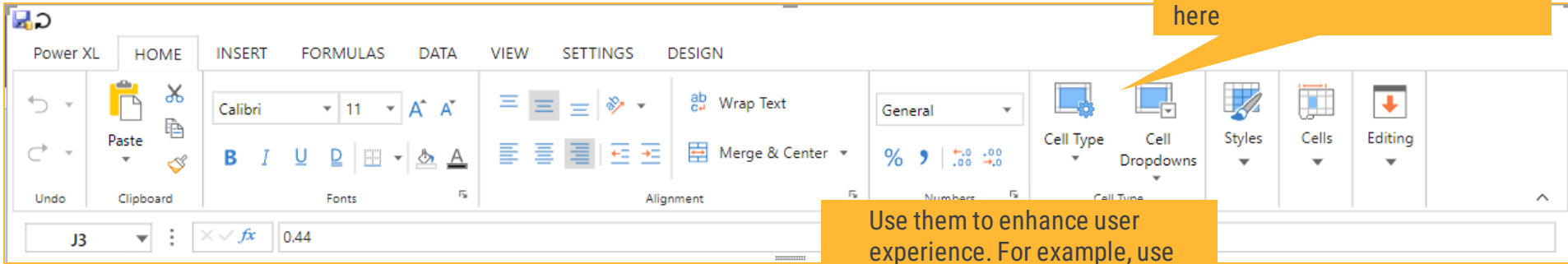
Line ID	Description	Sparkline	Account	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
<b>Total:</b>				13,176,160	288,509	266,883	-	159,497	263,698	2,200,904	148,643	205,156	95	5,161,979	4,230,299	250,497
101492	Service		Deferral Bundle Revenue													
101493	Service		Deferral Bundle Revenue	0	0	0	0	0	0	0	0	2	0	0	0	
101494	Service		Deferral Bundle Revenue	0	0	0	0	0	0	0	0	2	0	0	0	
101495	Service		Deferral Bundle Revenue	4,399	4,863	0	0	0	0	0	0	2	3,567	3,050	1,667	
101496	Software		Deferral Bundle Revenue	9,623	10,755	0	0	7,731	7,125	7,571	11,475	2	6,075	7,821	3,460	
101497	Service		Deferral Bundle Revenue	3,129	3,288	0	0	5,243	900	1,136	2,971	1	2,877	3,007	3,533	
101498	Hosting		Deferral Bundle Revenue	20,541	9,603	0	0	14,810	4,922	8,138	7,353	1	10,947	18,688	11,706	
101499	Service		Deferral Bundle Revenue	0	0	0	0	0	0	0	0	2	0	0	0	
101500	Service		Deferral Bundle Revenue	0	0	0	0	0	0	0	0	2	4,911,367	0	0	
101501	Service		Deferral Bundle Revenue	0	0	0	0	0	0	0	0	2	0	3,939,690	0	
101502	Hosting		Deferral Bundle Revenue													
101503	Other Salary & Related		Deferral Bundle Revenue													

# Sparklines

In this example a trend is shown as a sparkline



# Use wide variety of input controls



	C Product	Quantity	Due Date	Design	Build	Ship	Progress	Paint Color	Order Link	Ship To
2	Personalised Noteboo...	1,000	18 Mar. 2022	Waiting for Approval	Delayed	Working on it	34%	#7030A0	AUG0001	235 Bowery, New York, NY 10002, United St...
3	Leather Journal	500	18 Nov. 2021	Working on it	Delayed	Working on it	44%	#3a5823	AUG0002	558 Broadway, New York, NY 10012, United...
4	Vintage Necklace	800	08 Nov. 2021	Working on it	Delayed	Working on it		#abd08f	AUG0003	215 Centre St, New York, NY 10013, United ...
5	Scandinavian Print	800	20 Oct. 2021	Done	Delayed	Working on it		#f4b185	AUG0004	175 5th Ave, New York, NY 10010, United S...
6	Blue Wall Art	1,000	01 Oct. 2021	Delayed	Waiting for Approval	Waiting for Approval	15%	#2f5697	AUG0005	475 Broadway, New York, NY 10013, United...
7	Christmas Tree Kit.	500	22 Sep. 2021	Done	Waiting for Approval	Working on it				
8	Miniature Dollhouse	800	26 Jul. 2021	Working on it	Working on it	Delayed				
9	New item...									

	C Product	Quantity	Due Date	Design	Build	Ship	Progress	Paint Color	Order Link	Ship To
2	Personalised Noteboo...	1,000	18 Mar. 2022	Waiting for Approval	Delayed	Working on it	34%	#7030A0	AUG0001	235 Bowery, New York, NY 10002, United St...
3	Leather Journal	500	18 Nov. 2021	Working on it	Delayed	Delayed	44%	#3a5823	AUG0002	558 Broadway, New York, NY 10012, United...
4	Vintage Necklace	800	08 Nov. 2021	Working on it	Done	Working on it			AUG0003	215 Centre St, New York, NY 10013, United ...
5	Scandinavian Print	800	20 Oct. 2021	Done	Delayed	Delayed			AUG0004	175 5th Ave, New York, NY 10010, United S...
6	Blue Wall Art	1,000	01 Oct. 2021	Delayed	Waiting for Approval	Waiting for Approva			AUG0005	475 Broadway, New York, NY 10013, United...
7	Christmas Tree Kit.	500	22 Sep. 2021	Done	Waiting for Approval	Working on it			AUG0006	29 E 4th St, New York, NY 10003, United Sta...
8	Miniature Dollhouse	800	26 Jul. 2021	Working on it	Working on it	Delayed			AUG0007	252 1st Ave., New York, NY 10009, United S...
9	New item...									
10										
11										
12										

Theme Colors

Standard Colors

# Alias Columns

If you wish to display a different alias for a column than the original column name in the database, you can add a new row above the header of the table.

Add the aliases in this row and set the font color and background color to the same color code of the true header of the table, so that the original column names are not visible.

Expense Type	Expense Category	Expense Details	Description	Project	Account	Notes	Financial Tag	Vendor	PO Number	Pillar / Product / Sub-Product	Multiple	Sum By
Capex	Facilities	Hardware	Hardware	STAKING JEWEL	Serving Costs			Ace Data L...		ABC		
Opex	Non-Cap	Recruiting	Recruiting	OBEISANT LAUGH	Contracted Servi...			Itsukatsu		Build Submis...		
Opex	Non-Cap & ...		Service	OBEISANT LAUGH	Contracted Servi...			Hustle Sm...		Content Pro...		
Opex	Non-Cap & ...			LAND	Returns 2			Googlion IT		Content Pro...		
Opex	Non-Cap & ...			LAND	Returns 2			Enkso Tech		Source Contr...		
Opex	Non-Cap & ...			LAND	Returns 2			Zoom Tele...		Portal		
Opex	Non-Cap & ...			LAND	Deferral Bundle ...			Institute L...		Test Case M...		
Opex	Non-Cap & ...			LAND	Deferral Bundle			Eve Social		Content Pro...		

# Best way to edit Power XL visual

Power ON Manufacturing Process Planning

Back 1 3 3 1

Save Changes Discard Changes Undo Redo Reload Data Zoom In Zoom Out

Task name	Start time	Duration	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Chris	08/01/2021	120							
Gold	08/11/2021	64							
Blue	08/31/2021	92							
Scan	09/22/2021	93							
Persc	03/18/2022	-60							

Done Working on it 3 3 Delayed 1 1 1 Waiting for App...

2022 Microsoft Corporation

PowerXL HOME INSERT FORMULAS DATA VIEW SETTINGS

Writeback Service URL: <https://ppwebse>

Connection: HrOnboarding

Type: SQL Datasource

Column Type: Date

Layout Operations: Save Import Reset

Source Table: mpp.ProductOrd

Columns: Product Name, QTY, Due Date, Design, Build, Ship, Progress, Paint Color, Order link, Ship to

Select the visual and hit the **Focus mode** button in the top-right corner to enter the full screen mode.

If you have a smaller size Power XL visual in the report, you might struggle with editing it without resizing or moving.

PowerXL HOME INSERT FORMULAS DATA VIEW SETTINGS

Writeback Service URL: <https://ppwebse>

Connection: HrOnboarding

Type: SQL Datasource

Column Type: Date

Layout Operations: Save Import Reset

Source Table: mpp.ProductOrd

Product Name	QTY	Due Date	Design	Build	Ship	Progress	Paint Color	Order link	Ship to
Personalised Note	80	3/18/2022	Working on it	Waiting for Approval	Working on it	50%	#fed967	AUG001	235 Bowery, New York, NY 10002, Unit
Leather Journal	400	4/19/2022	Waiting for Approval	Delayed	Working on it	79%	#fed967	AUG002	558 Broadway, New York, NY 10012, Un
Vintage Necklace	850	10/15/2022	Done	Waiting for Approval	Done	39%	#70ad47	AUG003	215 Centre St, New York, NY 10013, Un
Scandinavian Print	800	9/22/2021	Done	Waiting for Approval	Delayed	44%	#fed967	AUG004	175 5th Ave, New York, NY 10010, Unit
Blue Wall Art	998	8/31/2021	Delayed	Working on it	Waiting for Approval	73%	#2f5697	AUG005	475 Broadway, New York, NY 10013, Ur
Christmas Tree Kit	70	8/1/2021	Working on it	Waiting for Approval	Working on it	82%	#c85b11	AUG006	29 E 4th St, New York, NY 10003, Unite
Miniature Dollhou	100	5/19/2022	Done	Delayed	Delayed	55%	#7030a0	AUG007	252 1st Ave., New York, NY 10009, Unit
Golden Hawk statu	120	8/11/2021	Working on it	Working on it		22%	#7ccea		

PowerXL HOME INSERT FORMULAS DATA VIEW SETTINGS

Writeback Service URL: <https://ppwebse>

Connection: HrOnboarding

Type: SQL Datasource

Column Type: Date

Layout Operations: Save Import Reset

Source Table: mpp.ProductOrd

Columns: Product Name, QTY, Due Date, Design, Build, Ship, Progress, Paint Color, Order link, Ship to