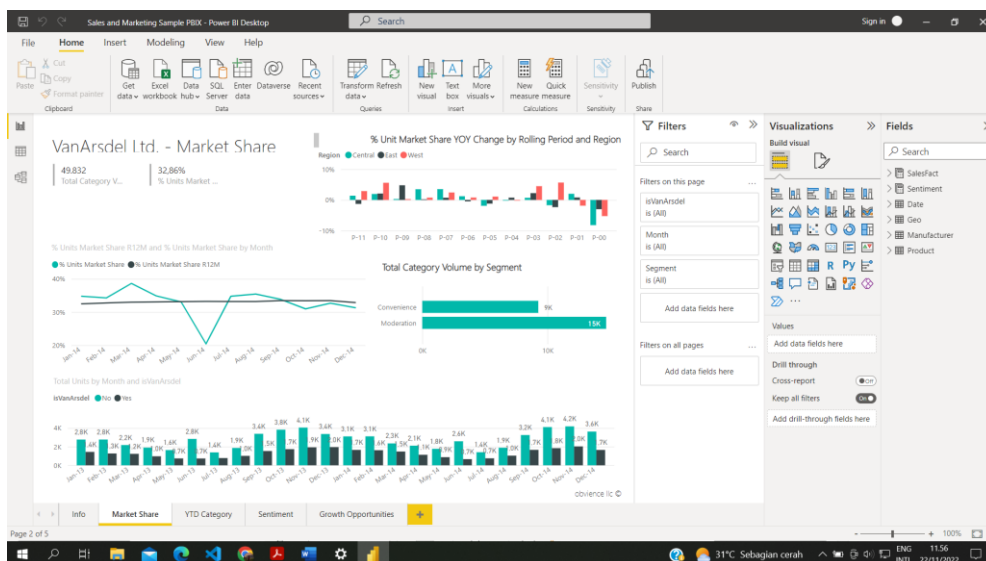
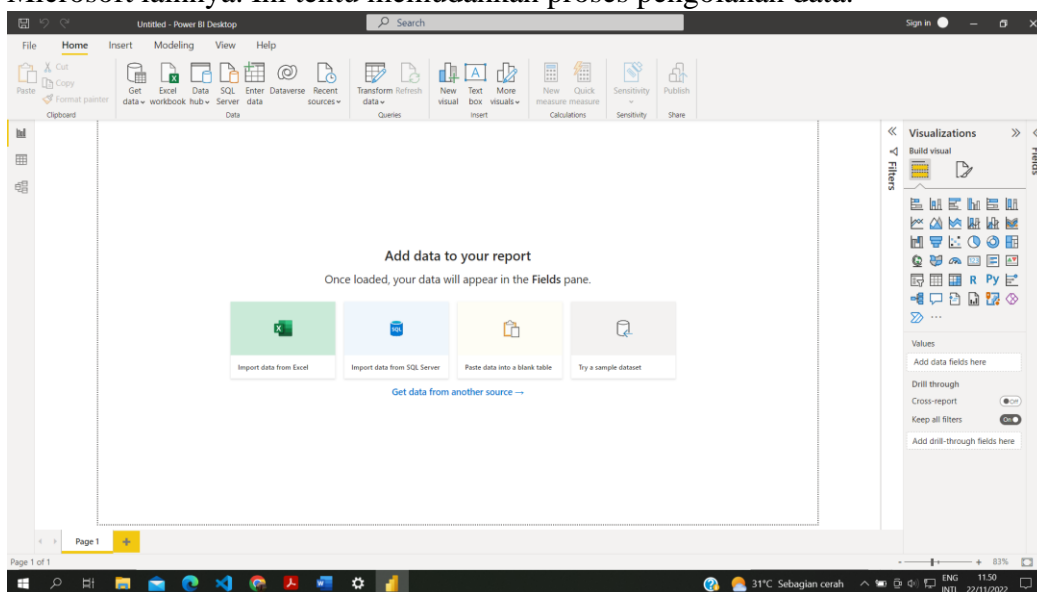


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Mata Kuliah : Data Warehouse

Tugas-1 PowerBI

PowerBI Intro.

PowerBI merupakan software yang memiliki fungsi untuk menggabungkan, menganalisis, membuat visualisasi, dan membagikan data. Semua fitur itu dikemas dalam tampilan yang intuitif. Tak hanya itu, Power BI sangat terintegrasi dengan Excel, Azure, dan produk-produk Microsoft lainnya. Ini tentu memudahkan proses pengolahan data.



Melihat Isi Data

Sales and Marketing Sample PBIX - Power BI Desktop

File Home Help Table tools

Name Product

Structure

Mark as date table Calendars

Manage relationships

New measure

Quick measure column calculations

New table

New table

Manufacturer	Category	Segment	Product	ProductID	IsVanArsdel	IsCompeteSide	ManufacturerID	IsCompete
VanArsdel	Urban	Convenience	Maximus UC-01	536	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-02	537	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-03	538	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-04	539	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-05	540	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-06	541	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-07	542	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-08	543	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-09	544	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-10	545	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-11	546	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-12	547	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-13	548	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-14	549	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-15	550	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-16	551	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-17	552	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-18	553	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-19	554	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-20	555	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-21	556	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-22	557	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-23	558	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-24	559	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-25	560	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-26	561	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-27	562	Yes	N	7	No
VanArsdel	Urban	Convenience	Maximus UC-28	563	Yes	N	7	No

Table: Product (2,412 rows)

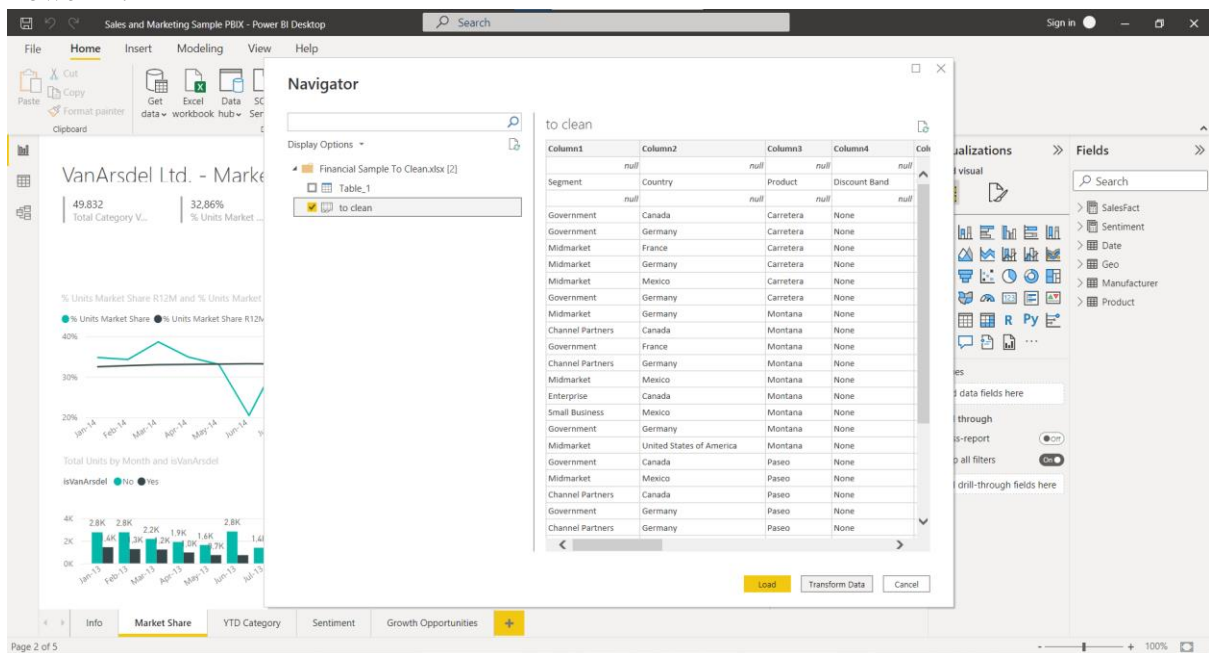
Fields

Search

- SalesFact
- Sentiment
- Date
- Geo
- Manufacturer
- Product

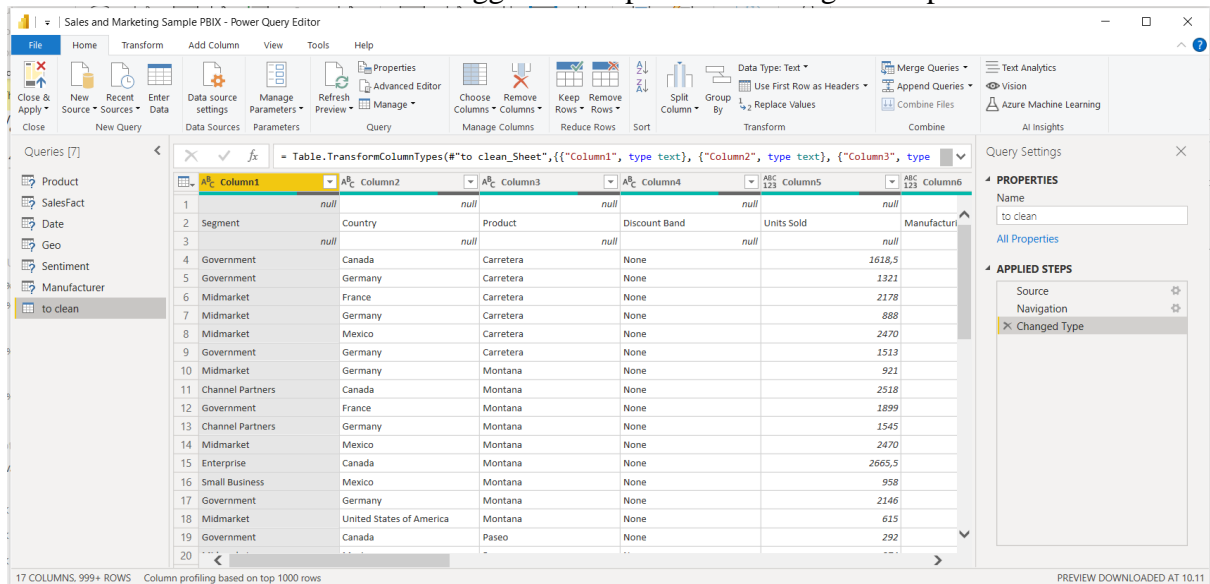
Input data.

Untuk menginput data kedalam PowerBI adalah dengan mengklik Button Get Data pada PowerBI, lalu klik Import Data From Excel, Select Table, dan data berhasil diinput kedalam PowerBI.

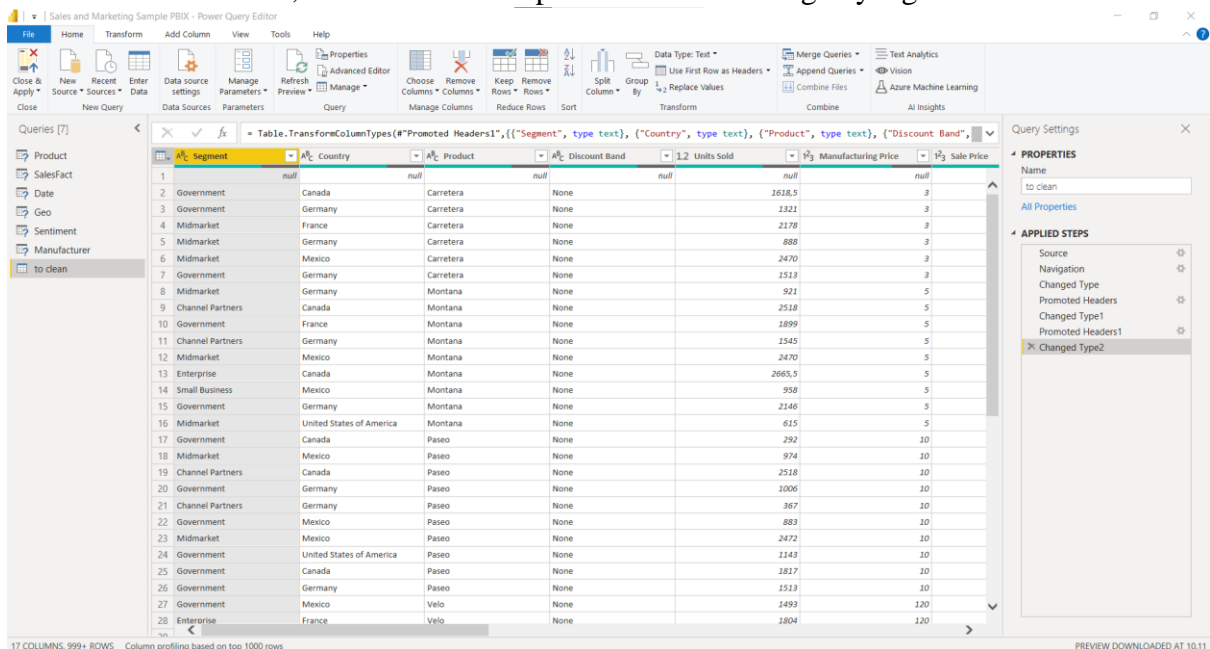


Power Query Editor yang memiliki fungsi untuk mengolah data dengan mudah pada PowerBI.

Disini data belum memiliki Label, untuk membuat label pada data kita bisa menekan Tombol use first row as Headers hingga Data dapat Dilabel dengan sempurna



Ketika posisi header data sudah pas, data bisa lebih mudah diolah. Namun disini terdapat kendala dimana ada barus null pada data, untuk menghapus baris null dapat dilakukan dengan menekan tombol Remove Rows, lalu menekan tombol Remove Top Rows Setelah data diremove, bis akita lihat tampilan data sesuai dengan yang dibawah ini



Pada Akhir data, terdapat Kolom yang tidak berlabel dan berisikan data, untuk menghapus kolom tersebut dapat menekan kolom yang dihapus dan drop kolom dengan klik Remove Columns

1.2 Month Number	1.2 Month Name	1.2 years	1.2 Column17
	Year		
1	January	2014	814028,
1	January	2014	814028,
6	June	2014	1473753,
6	June	2014	1473753,
6	June	2014	1473753,
12	December	2014	2717329,
3	March	2014	669866,
6	June	2014	1473753,
6	June	2014	1473753,
6	June	2014	1473753,
7	July	2014	923865,
8	August	2014	791066,
9	September	2014	1786735,
12	December	2014	2717329,
2	February	2014	1148547,
2	February	2014	1148547,
6	June	2014	1473753,
6	June	2014	1473753,
7	July	2014	923865,
8	August	2014	791066,
9	September	2014	1786735,
10	October	2014	3439781,
12	December	2014	2717329,
12	December	2014	
1	January	2014	
2	February	2014	

Pada Akhir data, terdapat Kolom yang tidak berlabel dan berisikan data, untuk menghapus kolom tersebut dapat menekan kolom yang dihapus dan drop kolom dengan klik Remove Columns

The screenshot shows the Power Query Editor interface. The main data table has the following columns: 1.2 COGS, 1.2 Profit, 1.2 Month Info, 1.2 Month Number, 1.2 Month Name, and 1.2 years. The 'APPLIED STEPS' pane on the right shows the following steps: Source, Navigation, Changed Type, Promoted Headers, Changed Type1, Promoted Headers2, Changed Type2, Renamed Columns, Removed Top Rows, and **Removed Columns** (highlighted). The 'Properties' pane on the right shows the 'Name' property set to 'to clean'.

	1.2 COGS	1.2 Profit	1.2 Month Info	1.2 Month Number	1.2 Month Name	1.2 years
1	32370	26185	01/01/2014	1	January	2014
2	26420	13210	01/01/2014	1	January	2014
3	22670	21780	01/06/2014	6	June	2014
4	13320	8880	01/06/2014	6	June	2014
5	37050	24700	01/06/2014	6	June	2014
6	529550	393380	01/12/2014	12	December	2014
7	13815	9210	01/03/2014	3	March	2014
8	30216	7554	01/06/2014	6	June	2014
9	37980	18990	01/06/2014	6	June	2014
10	18540	4635	01/06/2014	6	June	2014
11	37050	24700	01/06/2014	6	June	2014
12	333187,5	319860	01/07/2014	7	July	2014
13	287400	239500	01/08/2014	8	August	2014
14	15022	10730	01/09/2014	9	September	2014
15	9225	6150	01/12/2014	12	December	2014
16	5840	2920	01/02/2014	2	February	2014
17	14810	9740	01/02/2014	2	February	2014
18	30216	7554	01/06/2014	6	June	2014
19	352100	261560	01/06/2014	6	June	2014
20	4404	1101	01/07/2014	7	July	2014
21	6181	4415	01/08/2014	8	August	2014
22	37080	24720	01/09/2014	9	September	2014
23	8001	5715	01/10/2014	10	October	2014
24	36340	18170	01/12/2014	12	December	2014
25	529550	393380	01/12/2014	12	December	2014
26	10451	7465	01/01/2014	1	January	2014
27	225300	216480	01/02/2014	2	February	2014
28	25932	6483	01/03/2014	3	March	2014

Pivoting Data.

Setelah data diolah, kita akan menyatukan data (Pivoting Data) agar data lebih terstruktur dan mudah untuk diolah. Sebelum melakukan Pivoting data, kita harus menghapus variabel kosong (null) dengan cara drop table yang berisikan data null.

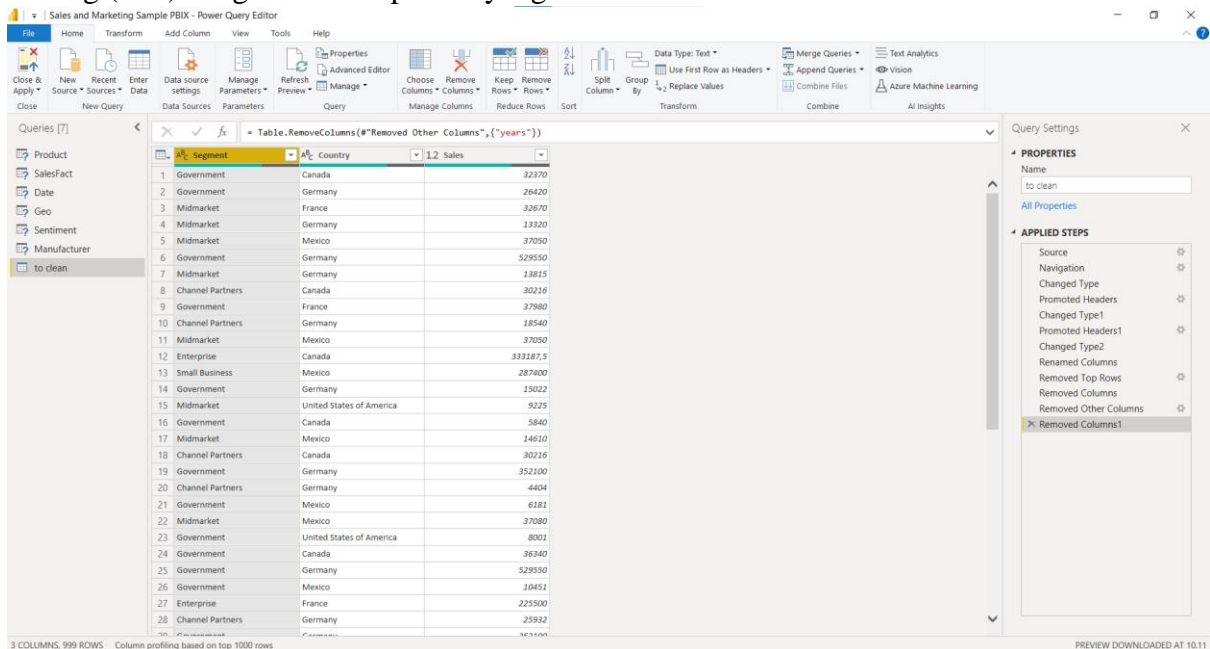


Table with 3 columns: Segment, Country, Sales. The table contains 28 rows of data. The 'Country' column has values like Canada, Germany, France, Mexico, and United States of America. The 'Sales' column contains numerical values. The 'Segment' column lists various categories like Government, Midmarket, Enterprise, etc.

Setelah data selesai di Pivot, tampilan data menjadi seperti ini.

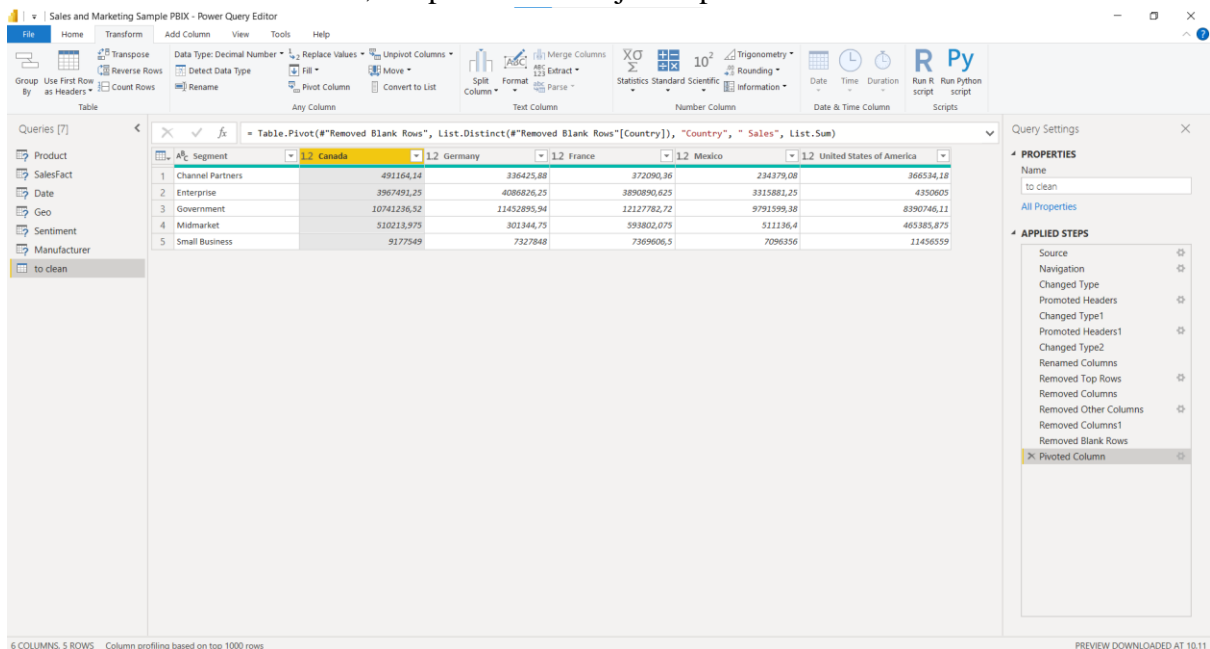
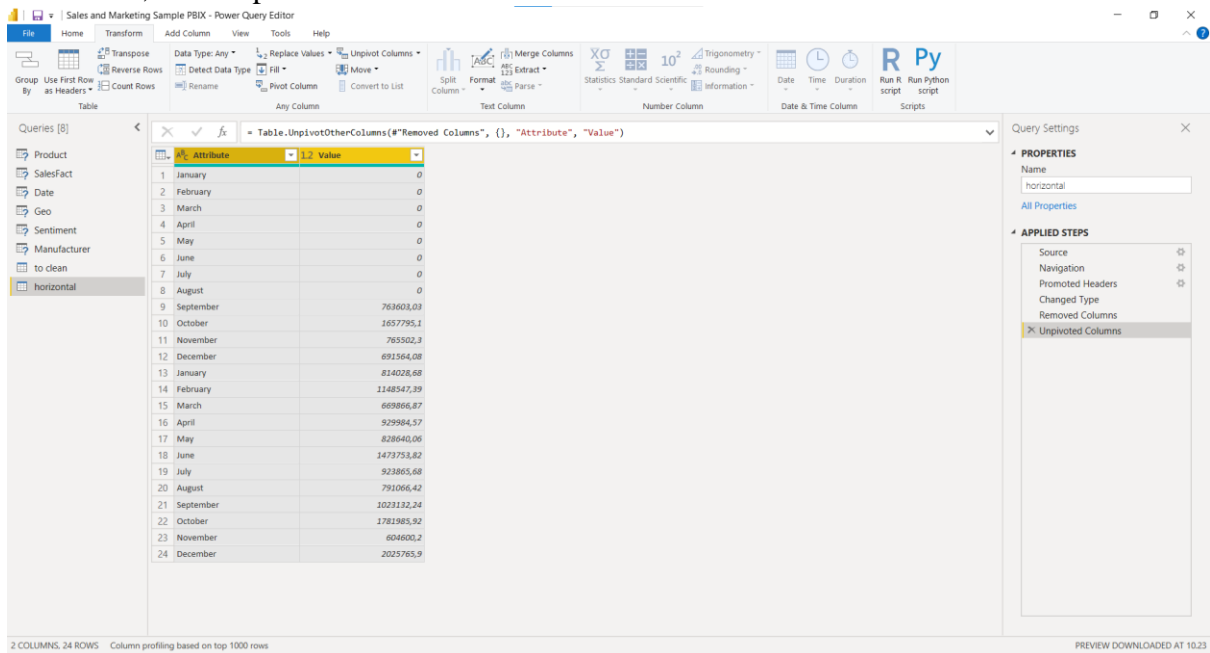


Table with 6 columns: Segment, Country, Sales, and three additional columns for different countries. The table contains 5 rows of data. The 'Country' column has values like Canada, Germany, France, Mexico, and United States of America. The 'Sales' column contains numerical values. The 'Segment' column lists various categories like Channel Partners, Enterprise, Government, Midmarket, and Small Business.

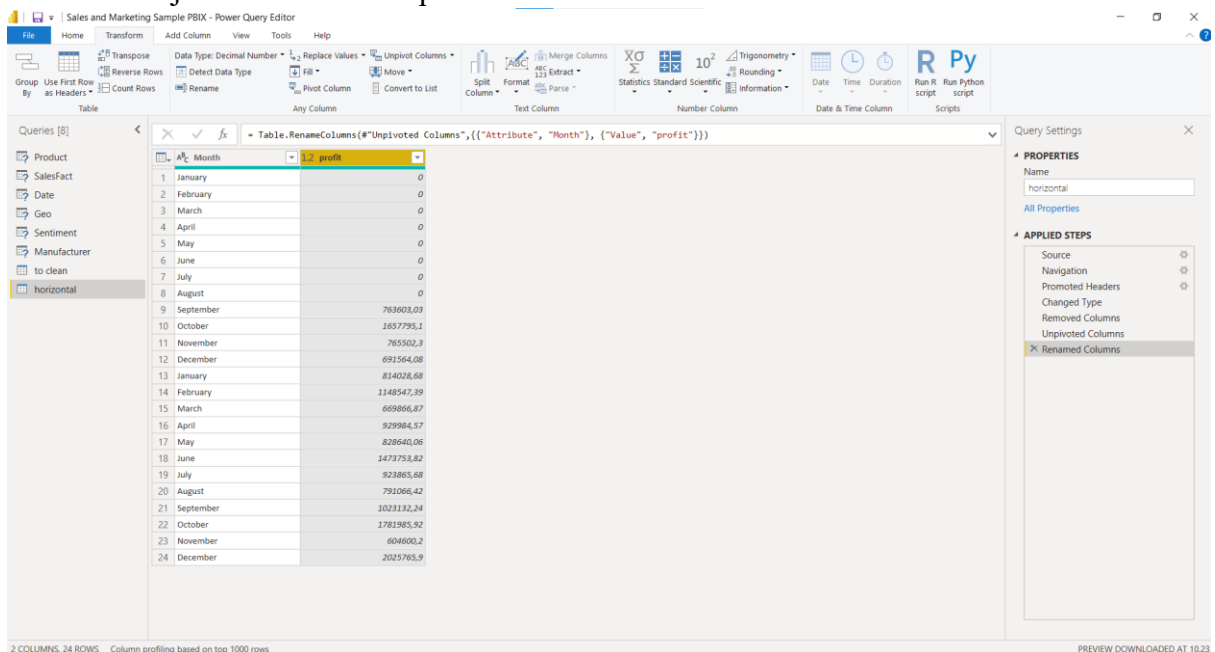
Unpivoting Data.

Ada beberapa jenis data yang terlanjur di Pivot namun setelah di Pivot data tidak bisa diolah dan harus dilakukan Unpivoting data. Untuk Mengunpivot data bisa dengan mengklik Transform, lalu Unpivot data.



Rename Table.

Table bisa direname dengan klik kanan lalu Rename Table. Bisa kita lihat nama table nya berubah menjadi “Month” dan “profit”



Power Query Editor - Sales and Marketing Sample PBIX

Query: Table.TransformColumnTypes(*Promoted Headers*, {"Segment", type text}, {"Country", type text}, {"Product", type text}, {"Discount Band", type text}, {"Units Sold", type number}, {"Manufacturing Price", type number}, {"Sale Price", type number})

	Segment	Country	Product	Discount Band	Units Sold	Manufacturing Price	Sale Price
1	Government	Canada	Carretera	None	1618,5	3	
2	Government	Germany	Carretera	None	1321	3	
3	Midmarket	France	Carretera	None	2178	3	
4	Midmarket	Germany	Carretera	None	888	3	
5	Midmarket	Mexico	Carretera	None	2470	3	
6	Government	Germany	Carretera	None	1513	3	
7	Midmarket	Germany	Montana	None	921	5	
8	Channel Partners	Canada	Montana	None	2518	5	
9	Government	France	Montana	None	1899	5	
10	Channel Partners	Germany	Montana	None	1545	5	
11	Midmarket	Mexico	Montana	None	2470	5	
12	Enterprise	Canada	Montana	None	2665,5	5	
13	Small Business	Mexico	Montana	None	958	5	
14	Government	Germany	Montana	None	2146	5	
15	Enterprise	Canada	Montana	None	345	5	
16	Midmarket	United States of America	Montana	None	615	5	
17	Government	Canada	Paseo	None	292	10	
18	Midmarket	Mexico	Paseo	None	974	10	
19	Channel Partners	Canada	Paseo	None	2518	10	
20	Government	Germany	Paseo	None	1006	10	
21	Channel Partners	Germany	Paseo	None	267	10	
22	Government	Mexico	Paseo	None	883	10	
23	Midmarket	France	Paseo	None	549	10	
24	Small Business	Mexico	Paseo	None	788	10	
25	Midmarket	Mexico	Paseo	None	2472	10	
26	Government	United States of America	Paseo	None	1143	10	
27	Government	Canada	Paseo	None	1725	10	
28	Channel Partners	United States of America	Paseo	None	912	10	

16 COLUMNS, 999 ROWS Column profiling based on top 1000 rows

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Jenis Table.

Jenis Table yang diinput dalam PowerBI adalah berbentuk text, dimana jika table berbentuk text angka yang terdapat didalamnya tidak bisa diolah. Untuk mengolahnya, kita bisa mengubah table yang berjenis Text menjadi Decimal Number dengan cara dibawah ini.

Power Query Editor - Sales and Marketing Sample PBIX

Query: Table.Distinct(*Changed Type*, {"Month Name"})

	COGS	Profit	Date	Month Number	Month Name	Year
1	32370	16185	01/01/2014	1	January	2014
2	32670	21780	01/06/2014	6	June	2014
3	529550	293380	01/12/2014	12	December	2014
4	13815	9210	01/03/2014	3	March	2014
5	333187,5	319860	01/07/2014	7	July	2014
6	287400	239500	01/08/2014	8	August	2014
7	15022	10730	01/09/2014	9	September	2014
8	43125	41400	01/10/2013	10	October	2013
9	5840	2920	01/02/2014	2	February	2014
10	603750	448500	01/11/2013	11	November	2013
11	25932	6483	01/03/2014	3	March	2014
12	34056	8514	01/04/2014	4	April	2014
13	7137,9	5150	01/05/2014	5	May	2014
14	null	null	null	null	null	null

16 COLUMNS, 14 ROWS Column profiling based on top 1000 rows

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Replace Values digunakan untuk mengubah nilai null menjadi unknown

The screenshot shows the Power Query Editor interface. A 'Replace Values' dialog box is open, allowing the user to replace 'null' with 'unknown' in the selected columns. The background data table includes columns for COGS, Profit, Date, Month Number, Month Name, and Year. The 'APPLIED STEPS' pane on the right indicates that the 'Changed Type' step has been applied.

Merge Data.

Pada PowerBI, terdapat fitur untuk menggabungkan 2 buah tabel yaitu merge dan append table. Append table adalah mensisipkan table ke table utama

The screenshot shows the Power Query Editor interface with a data table containing columns for Units Sold, Manufacturing Price, Sale Price, Gross Sales, Discounts, Sales, and COGS. The 'APPLIED STEPS' pane on the right shows 'Changed Type' as the last step.

Bisa kita lihat tabel France sudah disisip kedalam table Germany. Jangan lupa untuk merename table menjadi France-Germany

17 COLUMNS, 14 ROWS Column profiling based on top 1000 rows

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Disini saya juga memasukkan table Mexico didalam, namun bisa dilihat data dari Table Mexico bersikan null. Untuk drop isi data table mexico bisa menekan tombol X pada Applied Steps

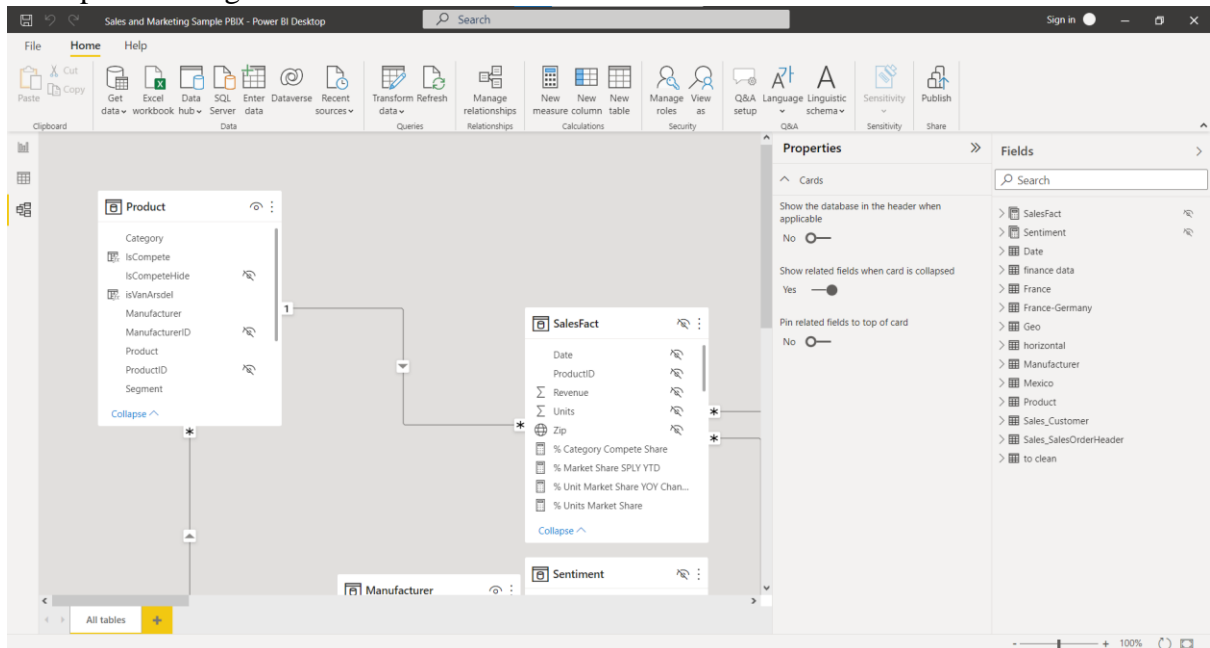
6 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

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Untuk menggabungkan 2 buah jenis table, kita harus melihat persamaan dari kedua dataset table tersebut. Bisa dilihat kalau kedua data memiliki kesamaan pada CustomerID sehingga data dicluster dan diurutkan dengan menjadikan CustomerID sebagai patokan data dan berikut hasil data Ketika sudah di Merge.

TerritoryID	AccountNumber	CustomerType	rowguid	ModifiedDate	Sales_SalesOrderHeader
1	AW00000001	S	(3F5AE95E-8B7D-4AED-95B4-C3797AFCB7...	13/10/2004 11.15.07	Table
2	AW00000002	S	(E552F657-A9AF-4A7D-A645-C42906E024...	13/10/2004 11.15.07	Table
3	AW00000003	S	(13077481-0B21-4EF3-98C8-C1048C06ED...	13/10/2004 11.15.07	Table
4	AW00000004	S	(F862851-1DAA-4044-8E7C-3E85583C054...	13/10/2004 11.15.07	Table
5	AW00000005	S	(839058DC-6F5E-4F71-B162-C8DA0A09F3...	13/10/2004 11.15.07	Table
6	AW00000006	S	(1A92DF8B-8FA2-467D-8D54-FCB9E647FD...	13/10/2004 11.15.07	Table
7	AW00000007	S	(03E9273E-8193-448E-9823-F0C44AEE078...	13/10/2004 11.15.07	Table
8	AW00000008	S	(801368B1-4323-48FA-88EA-985B1E48D4...	13/10/2004 11.15.07	Table
9	AW00000009	S	(8908B877-23C3-481D-80DA-C49A5806F7...	13/10/2004 11.15.07	Table
10	AW00000010	S	(C086698D-2FF1-4FBA-8F22-60AD1D11DA...	13/10/2004 11.15.07	Table
11	AW00000011	S	(750F3495-59CA-48A0-80E1-E37EC0E77D...	13/10/2004 11.15.07	Table
12	AW00000012	S	(9478CAF1-1F32-44F3-B9C3-0011F95BE54...	13/10/2004 11.15.07	Table
13	AW00000013	S	(80FA5854-2511-439B-A7AC-50C9C400B1...	13/10/2004 11.15.07	Table
14	AW00000014	S	(2F96BDC-723D-468F-834B-B2B8A79C8...	13/10/2004 11.15.07	Table
15	AW00000015	S	(0340737B-04FA-4795-93AA-CAE8B31BC...	13/10/2004 11.15.07	Table
16	AW00000016	S	(C9381589-D31C-4EFE-8978-8D3449EB1F0...	13/10/2004 11.15.07	Table
17	AW00000017	S	(34DB417F-1E0B-4408-9F6E-987E9D0073...	13/10/2004 11.15.07	Table
18	AW00000018	S	(C04D684D-94CE-4C5C-A44C-8449C0C1B...	13/10/2004 11.15.07	Table
19	AW00000019	S	(69AE5D43-31BE-4876-8FB8-5A23C4788B...	13/10/2004 11.15.07	Table
20	AW00000020	S	(E010C1DA-F1C3-48BA-81CA-A7E0B33504...	13/10/2004 11.15.07	Table
21	AW00000021	S	(564E0B42-4609-43DE-8881-914DA433D8...	13/10/2004 11.15.07	Table
22	AW00000022	S	(9774AE06-D673-412D-8481-2573E470B4...	13/10/2004 11.15.07	Table
23	AW00000023	S	(733F8250-3251-4C2A-8C35-C285B876B7...	13/10/2004 11.15.07	Table
24	AW00000024	S	(C111E51D-17BD-40BD-A6FF-1FCCB4B1A...	13/10/2004 11.15.07	Table
25	AW00000025	S	(31D03546-FB2A-44B8-890E-4709A659E3F...	13/10/2004 11.15.07	Table
26	AW00000026	S	(F0DA89DE-D138-4719-8C74-9F77605AAC...	13/10/2004 11.15.07	Table
27	AW00000027	S	(CACA5149-D799-473B-847F-83F3613D3D...	13/10/2004 11.15.07	Table
28	AW00000028	S	(98BA0444-D909-4F49-B1C3-3DE317D69B...	13/10/2004 11.15.07	Table

Dalam membuat Relationship, kita harus memastikan kedua buah data memiliki keterkaitan antar satu dengan yang lain. Jika bisa dibuat Relations dari kedua data maka data akan ditampilkan sebagai berikut.



Pada PowerBI kita bisa melihat Column Distribution dan Mengubah Query dengan fungsi Advance Director pada PowerBI

