

Sales Dashboard Creation & Analysis

Bank Muamalat Business Intelligence Analyst
Project Based Internship Program

Presented by
Febrian Satrio Wicaksono



Febrian S. Wicaksono

About me

I am a recent graduate of the Bachelor's program majoring in Agroindustrial Engineering. During my studies, I was actively involved in research projects, organizations and internships where I learned to work in a team both in staff positions and as a leader. I have also developed skills in using various data analysis and data visualization tools such as Ms.Excel, Looker Studio, Power BI, Google Bigquery and basic SQL.

Case Study

PT. Sejahtera Indonesia sedang berupaya untuk meningkatkan penjualan. Mereka ingin tidak hanya mempertahankan posisi saat ini, tetapi juga mencapai pertumbuhan yang lebih tinggi. Untuk mencapai tujuan ini, perusahaan perlu mencari cara-cara baru dan inovatif yang keputusannya dilakukan berdasarkan analisis data.

Berdasarkan hasil dari tabel Customers, Products, Order, dan ProductCategory, Saya telah diberi 5 tugas untuk dikerjakan:

1. Tentukan setiap primary key dalam 4 file dataset.
2. Tentukan relationship ke-4 tabel tersebut.
3. Buat Master Tabel.
4. Buat visualisasi data dari kumpulan data.
5. Membuat ringkasan dan rekomendasi

Primary key

Tabel Customers

Filter Enter property name or value

	Field name	Type	Mode	Key	Collation	Default Value	Policy Tags	Description
<input checked="" type="checkbox"/>	CustomerID	INTEGER	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	FirstName	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	LastName	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	CustomerEmail	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	CustomerPhone	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	CustomerAddress	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	CustomerCity	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	CustomerState	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	CustomerZip	INTEGER	NULLABLE	-	-	-	-	-

Primary key :
CustomerID

Untitled query RUN SAVE DOWNLOAD SHARE

```
1 SELECT
2   COUNT(*) AS total_rows,
3   COUNT(DISTINCT customerID) AS count_customerID,
4   COUNT(IF(customerID IS NULL, 1, NULL)) AS count_null_customerID
5 FROM
6   `PBI_TASK.Customers`
```

Query results

JOB INFORMATION					RESULTS	CHART	JSON	EXECUTION DETAILS
Row	total_rows	count_customerID	count_null_customer					
1	2123	2123	0					

Primary key

Table Orders

Filter Enter property name or value

	Field name	Type	Mode	Key	Collation	Default Value	Policy Tags ?	Description
<input checked="" type="checkbox"/>	OrderID	INTEGER	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	Date	DATE	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	CustomerID	INTEGER	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	ProdNumber	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	Quantity	INTEGER	NULLABLE	-	-	-	-	-

Primary key : OrderID

Untitled query **RUN** **SAVE** **DOWNLOAD** **SHARE**

```
1 SELECT
2 COUNT(*) AS total_rows,
3 COUNT(orderid) AS count_orderid,
4 COUNT(IF(orderid IS NULL, 1, NULL)) AS count_null_orderid
5 FROM
6 'PBI_TASK.Orders'
```

Query results

JOB INFORMATION	RESULTS	CHART	JSON	EXECUTION DETAILS
Row	total_rows	count_orderid	count_null_orderid	
1	3339	3339	0	

Primary key

Tabel ProductCategory

Filter	Enter property name or value							
	Field name	Type	Mode	Key	Collation	Default Value	Policy Tags	Description
<input checked="" type="checkbox"/>	CategoryID	INTEGER	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	CategoryName	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	CategoryAbbreviation	STRING	NULLABLE	-	-	-	-	-

Primary key :
CategoryID

Untitled query RUN SAVE DOWNLOAD SHARE

```
1 SELECT
2   COUNT(*) AS total_rows,
3   COUNT(categoryid) AS count_categoryid,
4   COUNT(IF(categoryid IS NULL, 1, NULL)) AS count_null_catgoryid
5 FROM
6   `PBI_TASK.ProductCategory`
```

Query results

JOB INFORMATION				RESULTS	CHART	JSON	EXECUTION DETAILS
Row	total_rows	count_categoryid	count_null_catgoryid				
1	7	7	0				

Primary key

Tabel Products

Filter Enter property name or value

	Field name	Type	Mode	Key	Collation	Default Value	Policy Tags	Description
<input checked="" type="checkbox"/>	ProdNumber	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	ProdName	STRING	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	Category	INTEGER	NULLABLE	-	-	-	-	-
<input type="checkbox"/>	Price	INTEGER	NULLABLE	-	-	-	-	-

Primary key :
ProdNumber

Untitled query

RUN

SAVE

DOWNLOAD

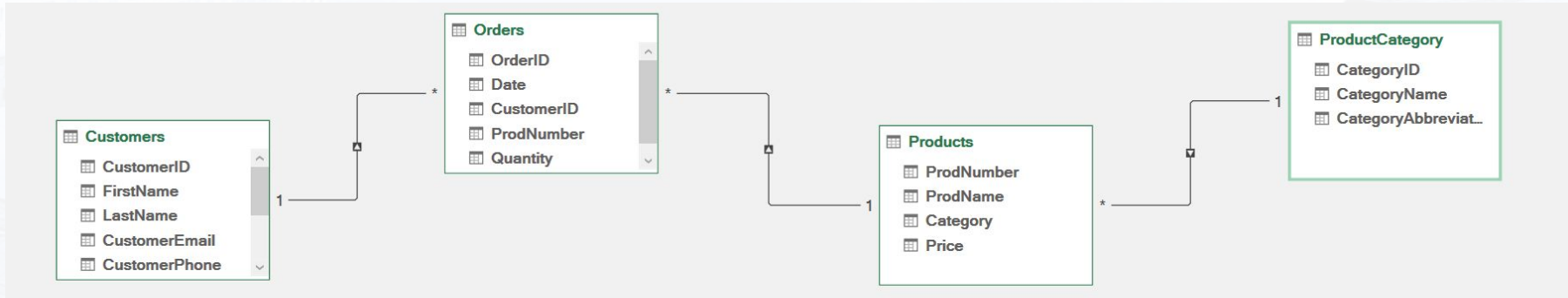
SHARE

```
1 SELECT
2 COUNT(*) AS total_rows,
3 COUNT(prodnumber) AS count_prodnumber,
4 COUNT(IF(prodnumber IS NULL, 1, NULL)) AS count_null_prodnumber
5 FROM
6 `PBI_TASK.Products`
```

Query results

JOB INFORMATION		RESULTS	CHART	JSON	EXECUTION DETAILS
Row	total_rows	count_prodnumber	count_null_prodnumber		
1	70	70	0		

Relationship



- Tabel customers memiliki hubungan **one to many** dengan tabel orders (CustomerID - CustomerID)
- Tabel Products memiliki hubungan **one to many** dengan tabel orders (ProdNumber - ProdNumber)
- Tabel productcategory memiliki hubungan **one to many** dengan tabel Products (CategoryID - Category)

Master Table

Untitled query									
<div><div>▶ RUN</div><div>📄 SAVE</div><div>⬇️ DOWNLOAD</div><div>👤 SHARE</div><div>🕒 SCHEDULE</div><div>🔑 OPEN IN</div><div>⚙️ MORE</div></div> <div>Query completed</div>									
<pre>1 select ord.date as order_date, 2 pc.CategoryName as category_name, 3 prd.ProdName as product_name, 4 prd.Price/100 as product_price, 5 ord.quantity as order_qty, 6 (prd.Price * ord.quantity)/100 as total_sales, 7 cst.customeremail as cust_email, 8 cst.customercity as cust_city 9 from PBI_TASK.Orders as ord 10 join PBI_TASK.Products as prd on prd.ProdNumber = ord.ProdNumber 11 join PBI_TASK.ProductCategory as pc on prd.Category = pc.CategoryID 12 join PBI_TASK.Customers as cst on ord.CustomerID = cst.CustomerID 13 order by 1</pre>									
Press Alt+F1 for Accessibility Option									
Query results									
<div>📄 SAVE RESULTS</div> <div>📊 OPEN IN</div> <div>⌵</div>									
JOB INFORMATIONRESULTSCHARTJSONEXECUTION DETAILSEXECUTION GRAPH									
Row	order_date	category_name	product_name	product_price	order_qty	total_sales	cust_email	cust_city	
1	2020-01-01	Drone Kits	BYOD-220	69.0	1	69.0	edew@nba.com	Honolulu	
2	2020-01-01	eBooks	Polar Robots	23.99	2	47.98	fvaslerqt@comsenz.com	Jackson	
3	2020-01-01	eBooks	SCARA Robots	19.5	5	97.5	llespercx@com.com	Des Moines	
4	2020-01-01	eBooks	Spherical Robots	16.75	5	83.75	lfromonte9@de.vu	Birmingham	
5	2020-01-01	Robots	RWW-75 Robot	883.0	3	2649.0	tmckernot@tinyurl.com	Katy	
6	2020-01-01	Training Videos	Drone Video Techniques	37.99	6	227.94	gstiggersdd@eventbrite.com	Saint Petersburg	
7	2020-01-02	Blueprints	Ladybug Robot Blueprint	12.0	2	24.0	akingaby78@deviantart.com	West Palm Beach	
8	2020-01-02	Drone Kits	BYOD-100	54.0	5	270.0	ijzelick84@ustream.tv	Washington	
9	2020-01-02	Drones	DTE-QFN20 Drone	250.0	2	500.0	jcolthurstgu@cbsnews.com	Sacramento	
Results per page: 50 1 - 50 of 3339									

Visualization

SALES DASHBOARD

Total Sales
1,754,751

Order Quantity
11,654

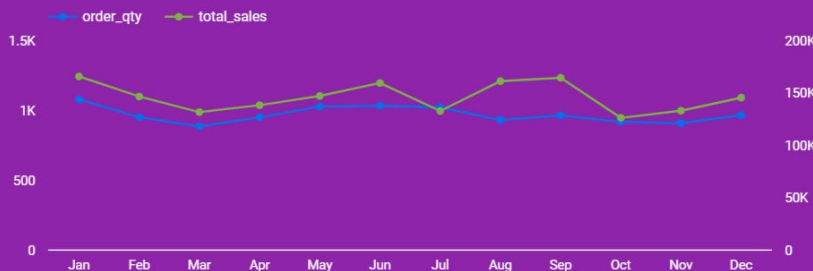
Product Category ▾

City ▾

Year ▾

Month ▾

Sales & Order Quantity Trends



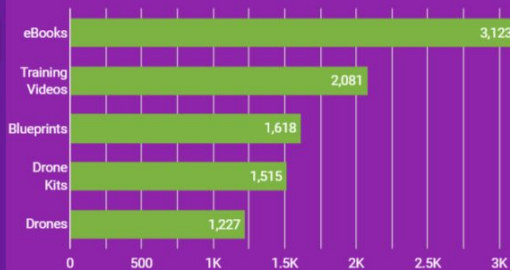
Top 5 City by Sales

	City	total_sales ▾
1.	Washington	55,381.94
2.	Houston	33,761.49
3.	Sacramento	33,380.2
4.	San Diego	29,228.59
5.	Albany	25,405.88
6.	Others	1,577,592.47
	Grand total	1,754,750.57

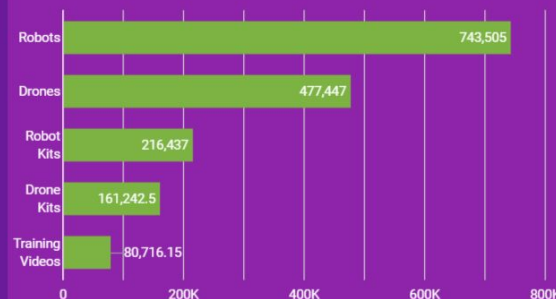
Top 5 City by Order Quantity

	City	Order Quantity ▾
1.	Washington	308
2.	Houston	249
3.	San Diego	203
4.	Atlanta	153
5.	Sacramento	153
6.	Others	10,588
	Grand total	11,654

Top 5 Order Quantity by Category

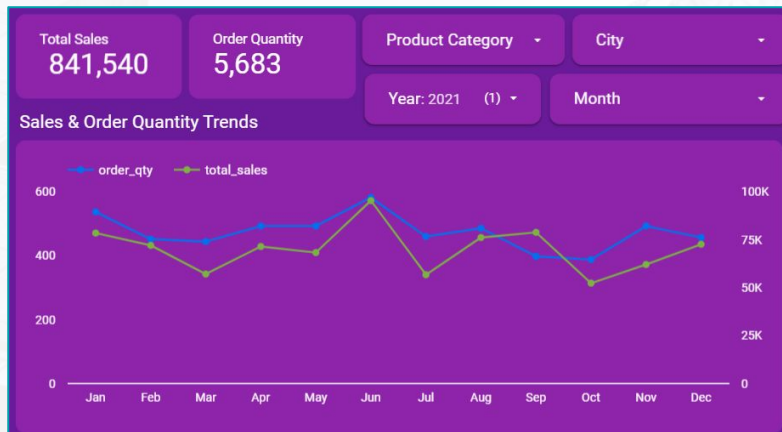


Top 5 Sales by Category



[Link](#)

Insight & Recommendation



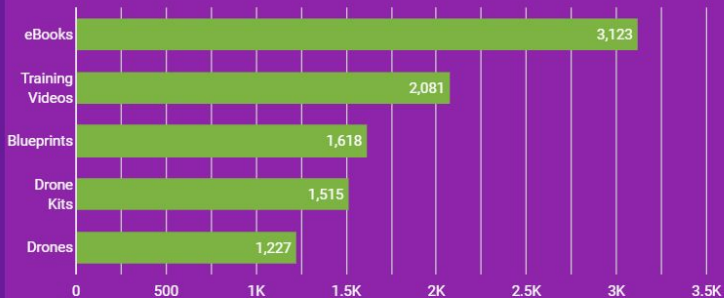
1. Penawaran Promosi Musiman

- Berdasarkan tren bulanan, fokuskan penawaran promosi besar-besaran menjelang bulan tertentu untuk memanfaatkan peak season.
- Ciptakan kampanye spesial seperti "*Summer Sales*" atau "*Holiday Discounts*".

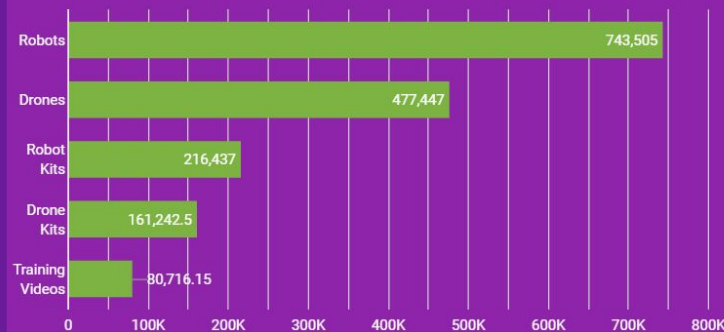
2. Gunakan data historis untuk memprediksi permintaan di bulan tertentu, sehingga inventaris lebih terencana.

Insight & Recommendation

Top 5 Order Quantity by Category



Top 5 Sales by Category



3. Optimalkan Produk dengan Performa Terbaik

- Fokus pada promosi dan stok kategori unggulan seperti *Robots* dan *eBooks*.
- Buat paket bundling yang melibatkan *Training Videos* atau produk dengan kontribusi lebih rendah untuk meningkatkan nilai tambah.

Insight & Recommendation

Top 5 City by Sales			Top 5 City by Order Quantity		
	City	total_sales ▾		City	Order Quantity ▾
1.	Washington	55,381.94	1.	Washington	308
2.	Houston	33,761.49	2.	Houston	249
3.	Sacramento	33,380.2	3.	San Diego	203
4.	San Diego	29,228.59	4.	Atlanta	153
5.	Albany	25,405.88	5.	Sacramento	153
6.	Others	1,577,592.47	6.	Others	10,588
	Grand total	1,754,750.57		Grand total	11,654

4. Tingkatkan Aktivitas Pemasaran di Kota Potensial

- Washington dan Houston menunjukkan performa yang kuat. Maksimalkan kehadiran di pasar ini melalui kampanye khusus, diskon lokal, atau event eksklusif.
- Berikan perhatian khusus untuk kota seperti Albany dan Sacramento dengan strategi retargeting.

Insight & Recommendation

	cust_email	Order Quantity ▾	total_sales
1.	gmasic8k@whitehouse.gov	26	4,310.71
2.	hbrisleygo@telegraph.co.uk	26	1,709.59
3.	hfaulconerbv@msu.edu	25	9,666.46
4.	genochef@networkadvertising.org	24	7,220.5
5.	achristolqa@networksolutions.com	23	2,859.5
6.	Others	11,530	1,728,983.81
	Grand total	11,654	1,754,750.57

	cust_email	Order Quantity	total_sales ▾
1.	hfaulconerbv@msu.edu	25	9,666.46
2.	aduberryoq@hugedomains.com	14	7,670
3.	wmacdowalb6@theforest.net	15	7,565
4.	breubens76@taobao.com	11	7,361
5.	genochef@networkadvertising.org	24	7,220.5
6.	Others	11,565	1,715,267.61
	Grand total	11,654	1,754,750.57

5. Perkuat Customer Retention

- Buat program loyalitas pelanggan, seperti poin reward untuk pembelian produk dari kategori unggulan.
- Berikan insentif berupa voucher atau diskon untuk pembelian berikutnya.

Video Presentation

Github



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Thank You



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