

Final Task - Dashboard

Business Intelligence Analyst – Bank Muamalat

Presented by
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Case Study

Anda seorang Business Intelligence Analyst di PT Sejahtera Bersama. Anda diberikan sebuah *dataset* yang berisikan empat buah *file* data dengan format CSV. Dataset tersebut berkaitan dengan kegiatan bisnis perusahaan. Berikut adalah *file* yang diberikan kepada anda:

1. Customers
2. Orders
3. Products
4. ProductCategory

Anda diberikan lima tugas yang harus anda kerjakan menggunakan data yang telah diberikan. Lima tugas anda sebagai berikut:

1. Tentukan *constraints* pada masing-masing tabel data yang disediakan!
2. Tentukan hubungan dari keempat tabel tersebut!
3. Buat sebuah *table master* dan urutkan data berdasarkan tanggal transaksi yang paling awal sampai yang paling akhir!
4. Buatlah sebuah dashboard dari data yang sudah anda olah!
5. Apa yang bisa anda usulkan untuk mempertahankan penjualan ataupun menaikkan penjualan dengan tabel transaksi detail yang sudah ada?

Data Prepare

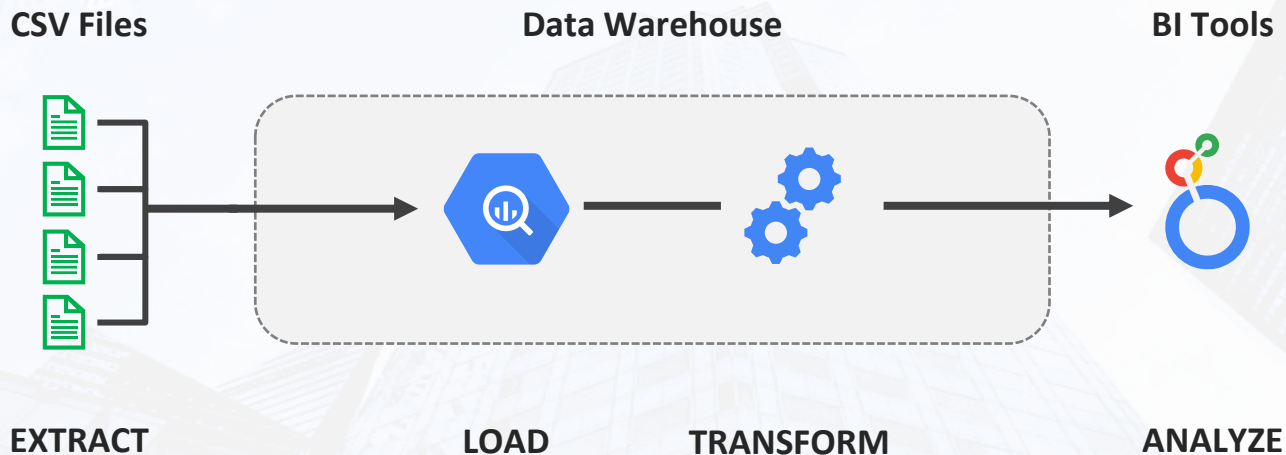


Table Constraints

Dari gambar ERD di samping dapat ditentukan mana saja Primary Key (PK) dan Foreign Key (FK) di masing-masing tabel.

Primary Key:

- Tabel Product: **ProdNumber**
- Tabel ProductCategory: **CategoryID**
- Tabel Customer: **CustomerID**
- Tabel Orders: **OrderID**

Foreign Key:

- Tabel Product: **Category**
- Tabel Orders: **CustomerID & ProdNumber**

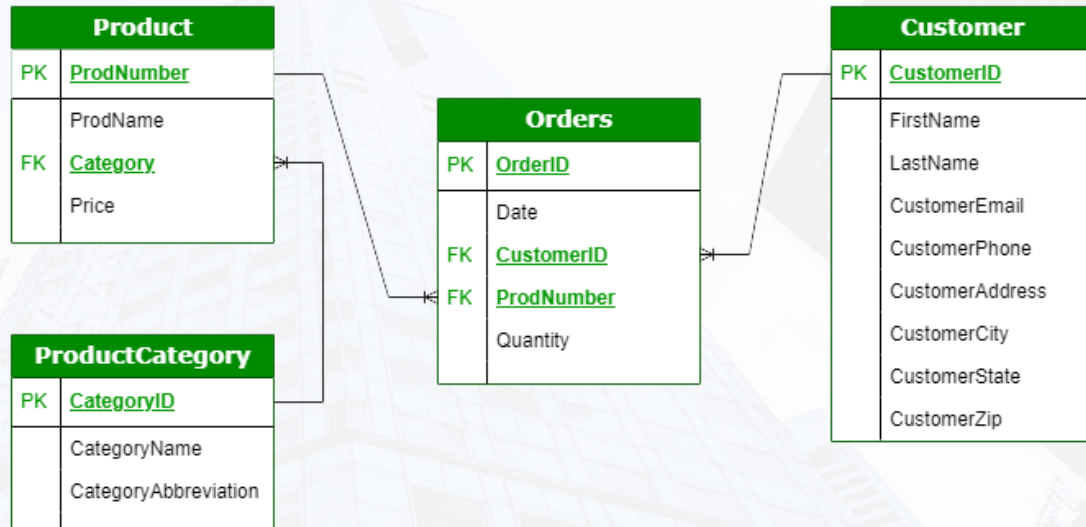
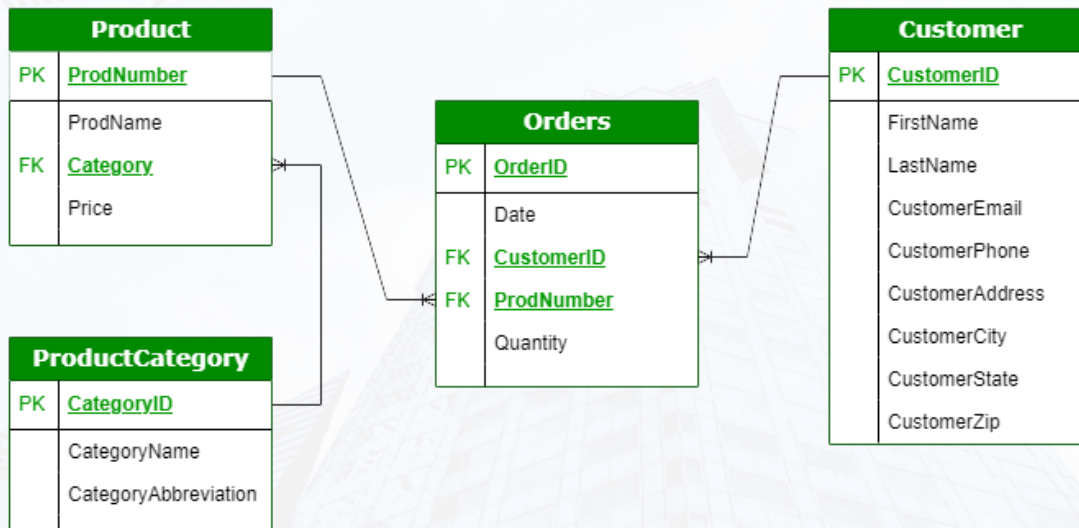


Table Relationship



Relasi antar tabel pada dataset yang disediakan semuanya memiliki hubungan **one-to-many** atau **many-to-one**

**Urutan key berdasarkan besar ukuran tabel*

- p.Category = pc.CategoryID (**many-to-one**)
- o.ProdNumber = p.ProdNumber (**many-to-one**)
- o.CustomerID = c.CustomerID (**many-to-one**)

- p = Product
- o = Orders
- pc = ProductCategory
- c = Customer

Table Master

Proses join master table menggunakan CTE untuk meningkatkan keterbacaan (*readability*) query SQL.

```
1 WITH product_detail AS (
2   SELECT
3     p.ProdNumber,
4     p.ProdName,
5     p.Category,
6     pc.CategoryName,
7     p.Price
8   FROM 'vix_rakamin.products' AS p
9   INNER JOIN 'vix_rakamin.product_category' AS pc
10    ON p.Category = pc.CategoryID
11 ),
12
13 complete_table AS (
14   SELECT
15     o.OrderID AS order_id,
16     o.Date AS date,
17     o.CustomerID AS customer_id,
18     REGEXP_SUBSTR(c.CustomerEmail,'^[^#]+#') AS email,
19     c.CustomerCity AS city,
20     c.CustomerState AS state,
21     o.ProdNumber AS prod_number,
22     pd.ProdName AS prod_name,
23     pd.CategoryName AS prod_category,
24     pd.Price AS price,
25     o.Quantity AS qty,
26     (o.Quantity * pd.Price) AS total_sales
27   FROM 'vix_rakamin.orders' AS o
28   INNER JOIN 'vix_rakamin.customer' AS c
29    ON o.CustomerID = c.CustomerID
30   INNER JOIN product_detail AS pd
31    ON o.ProdNumber = pd.ProdNumber
32 )
33
34 SELECT
35   date AS order_date,
36   prod_category AS category_name,
37   prod_name AS product_name,
38   price AS product_price,
39   qty AS order_qty,
40   total_sales,
41   email AS cust_email,
42   city AS cust_city
43 FROM complete_table
44 ORDER BY date ASC;
```

Row	order_date	category_name	product_name	product_price	order_qty	total_sales	cust_email	cust_city
1	2020-01-01	Drone Kits	BYOD-Z20	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	Robots	RWW-75 Robot	883.0	3	2649.0	tmckemot@tinyurl.com	Katy
4	2020-01-01	eBooks	SCARA Robots	19.5	5	97.5	llespercx@com.com	Des Moines
5	2020-01-01	eBooks	Spherical Robots	16.75	5	83.75	lfromonte9@de.vu	Birmingham
6	2020-01-01	Training Videos	Drone Video Techniques	37.99	6	227.94	gstiggersdd@eventbrite.com	Saint Petersburg
7	2020-01-02	Drone Kits	BYOD-100	54.0	5	270.0	jzellick84@ustream.tv	Washington
8	2020-01-02	Robot Kits	BYOR-3000	214.0	2	428.0	croylede@dot.gov	Virginia Beach
9	2020-01-02	Robot Kits	BYOR-2640S	189.0	2	378.0	aguiongo@behance.net	Houston
10	2020-01-02	Robot Kits	BYOR-2640S	189.0	2	378.0	gmirlees4v@state.tx.us	Washington
11	2020-01-02	Drones	DTE-QFN20 Drone	250.0	2	500.0	jcothurstpu@cbsnews.com	Sacramento
12	2020-01-02	eBooks	Fixed Wing Drones	15.5	3	46.5	ohalbardv@booking.com	Birmingham
13	2020-01-02	Training Videos	Drone Video Techniques	37.99	2	75.98	lgatenbyel@quantcast.com	Des Moines
14	2020-01-02	Blueprints	Ladybug Robot Blueprint	12.0	2	24.0	akingby78@deviantart.com	West Palm Beach
15	2020-01-02	Training Videos	Understanding Automation	44.95	1	44.95	ksteershp@ameblo.jp	San Diego
16	2020-01-03	Drone Kits	BYOD-350	89.95	3	269.85	bbockhcd@jimdo.com	Torrance
17	2020-01-03	Drones	DA-SA702 Drone	399.0	4	1596.0	cgabrielea@spotify.com	Stamford
18	2020-01-03	Robots	MICR-23K Robot	899.0	2	1798.0	ccobiataru@netlog.com	Charlotte
19	2020-01-03	Training Videos	Drone Video Techniques	37.99	3	113.97	rehm6a@yandex.ru	Green Bay
20	2020-01-04	Drone Kits	BYOD-350	89.95	4	359.8	croylede@dot.gov	Virginia Beach
21	2020-01-04	Drone Kits	BYOD-550	179.0	2	358.0	nrmaven30@go.com	Sarasota
22	2020-01-04	Drones	DC-304 Drone	395.0	3	1185.0	sabrahamian3@zimbio.com	Charlotte
23	2020-01-04	Robots	MICR-23K Robot	899.0	5	4495.0	dkainzh6@freewebs.com	Albany
24	2020-01-04	Training Videos	Drone Video Techniques	37.99	3	113.97	mchesmanfc@mit.edu	Palatine
25	2020-01-05	eBooks	RTF Drones	16.99	5	84.94999999999999	polivio2@ft.com	Sacramento
26	2020-01-05	eBooks	SCARA Robots	19.5	4	78.0	miesley1a@comcast.com	Brown Beach

Dashboard #1



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DASHBOARD

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Select Product Category ▾

Select date range ▾

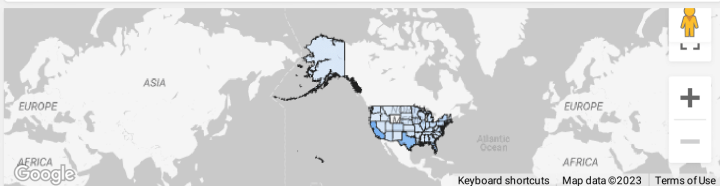
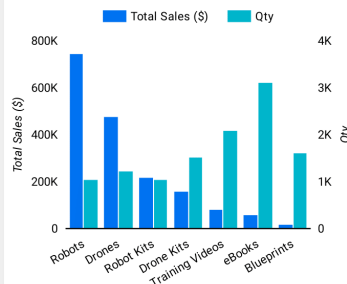
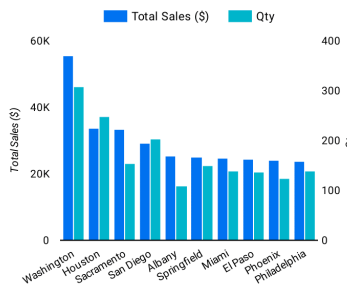
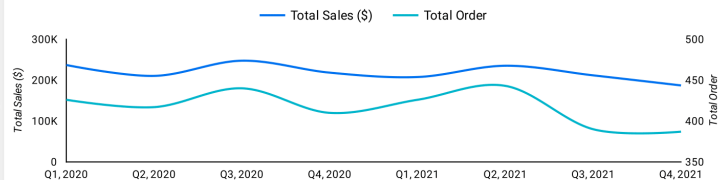
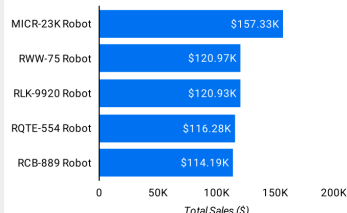
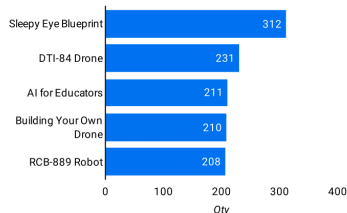
Total Sales
\$1,754,751

Median Sales
\$129

Total Orders
3,339

Total Customers
1,671

Ovr. Churn Rate
32%



Total Sales \$444.26 \$237,295.59

	Product Name	Category	Price	Total Order	Qty	Total Sales	%Total Sales
1.	Sleepy Eye Blueprint	Blueprints	\$11.99	89	312	\$3,740.88	0.21%
2.	AI for Educators	Training Videos	\$49.95	64	211	\$10,539.45	0.6%
3.	DTI-84 Drone	Drones	\$455	63	231	\$105,105	5.99%
4.	BYOD-500	Drone Kits	\$167	61	203	\$33,901	1.93%
5.	Building Your Own	eBooks	\$24.99	59	210	\$5,247.9	0.3%

Dashboard #2



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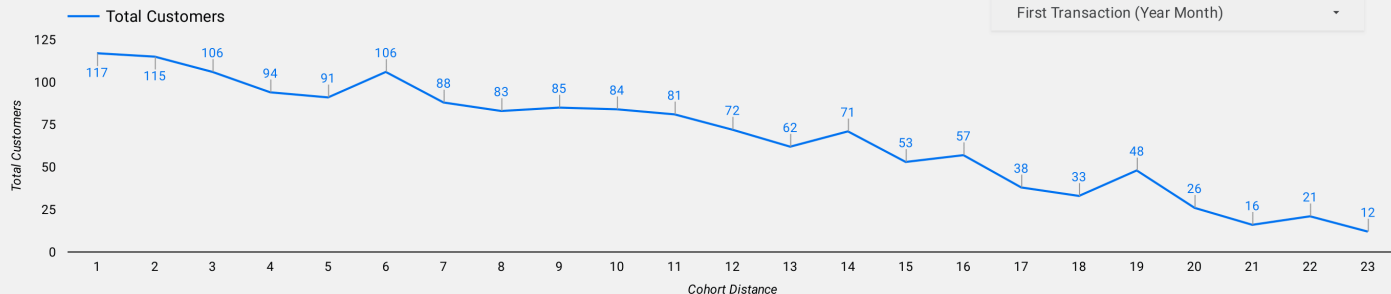
DASHBOARD

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Select Product Category ▾

Select date range ▾

Cohort Distance / Retention Percent																							
First Cohort	Total Custom...	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Jan 2020	149	100%	8.72...	5.37...	10.0...	7.38...	5.37...	4.7%	3.36...	8.72...	8.05...	4.03...	6.04...	6.04...	6.71...	6.71...	4.7%	4.7%	8.05...	6.04...	8.05...	4.7%	3.36...
Feb 2020	124	100%	4.84...	6.45...	14.5...	5.65...	3.23...	8.06...	8.87...	4.84...	8.06...	5.65...	4.84...	5.65...	7.26...	11.2...	5.65...	12.9...	7.26...	3.23...	4.84...	6.45...	3.23...
Mar 2020	113	100%	7.08...	7.96...	5.31...	7.08...	8.85...	5.31...	7.96...	1.77...	9.73...	8.85...	7.96...	8.85...	3.54...	5.31...	6.19...	2.65...	1.77...	7.08...	8.85...	6.19...	6.19...
Apr 2020	97	100%	10.3...	7.22...	8.25...	9.28...	5.15...	8.25...	6.19...	7.22...	10.3...	5.15...	9.28...	5.15...	9.28...	8.25...	1.03...	8.25...	2.06...	1.03...	7.22...	4.12...	-
May 2020	110	100%	6.36...	7.27...	4.55...	6.36...	6.36...	9.09...	10%	7.27...	4.55...	6.36...	4.55...	4.55...	10%	10%	6.36...	5.45...	4.55...	7.27...	11.8...	-	-
Jun 2020	85	100%	4.71...	10.5...	5.88...	4.71...	4.71...	3.53...	7.06...	7.06...	4.71...	9.41...	4.71...	12.9...	3.53...	4.71...	7.06...	5.88...	3.53...	3.53...	-	-	-
Jul 2020	107	100%	3.74...	8.41...	8.41...	7.48...	5.61...	8.41...	5.61...	4.67...	5.61...	4.67...	8.41...	4.67...	7.48...	7.48...	3.74...	6.54...	4.67...	-	-	-	-
Aug 2020	72	100%	8.33...	5.56...	4.17...	8.33...	9.72...	6.94...	2.78...	5.56...	5.56...	8.33...	9.72...	11.1...	1.39...	4.17...	8.33...	6.94...	-	-	-	-	-
Sep 2020	89	100%	6.74...	5.62...	4.49...	4.49...	4.49...	12.3...	4.49...	6.74...	3.37...	7.87...	3.37...	3.37...	6.74...	5.62...	8.99...	-	-	-	-	-	-
Oct 2020	81	100%	4.94...	3.7%	3.7%	6.17...	4.94...	9.88...	3.7%	8.64...	7.41...	8.64...	6.17...	2.47...	1.23...	2.47...	-	-	-	-	-	-	-



Dashboard #3



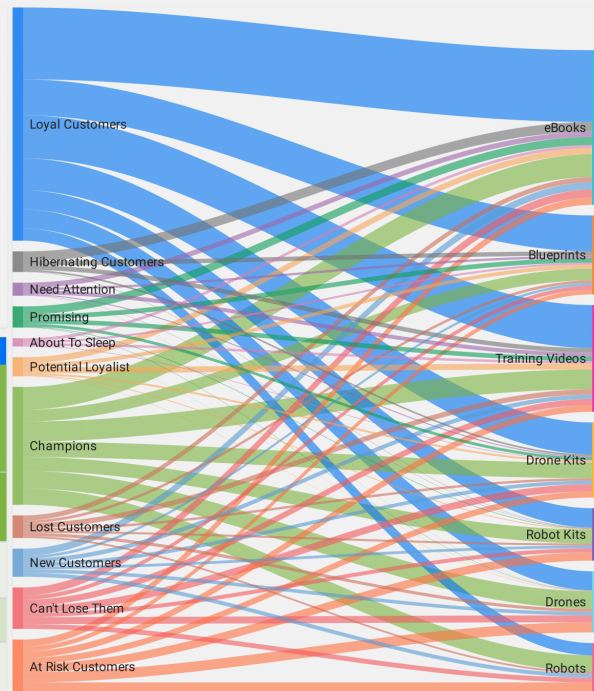
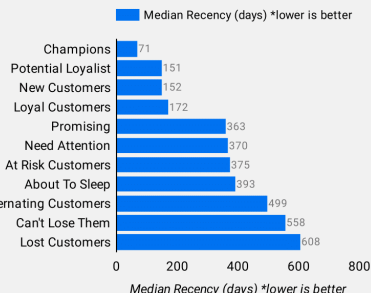
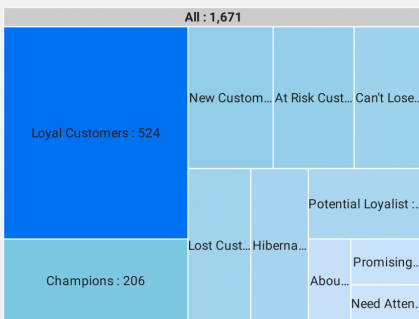
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Select RFM Segment ▾

Select date range ▾



RFM Segment	Description	Action	Total Sales	%Sales
Champions	Most recent, often buy, highest spending customers	Focus on loyalty programs, always introduce them with new products because they have the highest willingness to pay, become early adopter, and have the ability to promote our brands. Offer value added product recommendations based on their product preferences. Best for upselling products.	\$506.42K	28.86%
Loyal Customers	Often spend good amount of money. Responsive to promotions	Focus on loyalty programs, consider advocacy program or any other benefit/reward to them. Engage them by asking for reviews. Best for upselling	\$538.56K	30.69%
Potential Loyalist	Recent customers, spent good amount, bought more than once	Offer them with loyalty programs and always recommend related/other products	\$15.23K	0.87%
New Customers	Bought more recently, but not often	Build relationship with them by providing onboarding support or any special offers	\$114.89K	6.55%
Promising	Not so recent, but often spent above average	Build and maintain relationship, recommend them with related product based on their past purchases to increase monetization	\$15.35K	0.87%

Rekomendasi

- Maksimalkan penjualan produk sesuai target segmen pelanggan.
- Kuantitas besar \neq Untung. Lakukan upaya-upaya upselling pada produk-produk yang bernilai rendah seperti blueprint, ebook, dan training videos untuk memaksimalkan potensi pendapatan *revenue*.
- Berikan *added value* pada produk-produk bernilai jual tinggi untuk mendorong jumlah pembelian yang lebih banyak.
- Bangun strategi *campaign* yang sesuai untuk meningkatkan kesadaran pelanggan terhadap *brand value* dengan tujuan untuk meningkatkan retensi.
- Tawarkan promo atau tawaran khusus lainnya untuk memenangkan kembali pelanggan yang “hilang” serta meningkatkan monetisasi mereka.



Repository GitHub

[Klik disini untuk menuju repository GitHub](#)



Google Drive

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Thank You



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