

# Business Intelligence Analyst Test

## Project Based Internship VIX

Presented by  
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## Muhammad Jilham

### About Me

Seorang Mahasiswa jurusan Sistem Informasi yang mempunyai ketertarikan dibidang Data Analitik, Database Administrator, Data Engineer, dan Pengembangan Bisnis. Memiliki kapasitas dan kemampuan dalam mengelola database, melakukan backup dan restore database, membersihkan data, manipulasi data, visualisasi data kedalam bentuk dashboard,

### Experience

- BTPN Syariah x Rakamin** | Data Engineer  
Januari 2024 – Februari 2024
- ID/X Partners x Rakamin** | Data Engineer  
Desember 2023 – Januari 2024
- Jual\_Startrail.id** | Business Owner  
April 2023 – Juni 2023
- Shopiam.id** | Business Owner  
Januari 2021 – Sekarang

# About Dataset

Dataset yang digunakan pada pengerjaan proyek ini terdiri dari 4 tabel yaitu:

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

Dataset berisi data dengan rentang tanggal 1 Januari 2020 sampai dengan 31 Desember 2021

# Case Study

Objektif dari project yang diberikan oleh Bank Muamalat adalah:

1. Menentukan key dan relasi dari ke 4 tabel
2. Membuat tabel master yang berisi beberapa kolom dari ke 4 tabel
3. Mengekspor data kedalam bentuk csv
4. Membuat visualisasi menggunakan Looker Studio

Software yang digunakan:

1. Google Big Query
2. Looker Studio

# Tabel Preview

## Tabel Products

Untitled 3 RUN SAVE DOWNLOAD SHARE SCHEDULE MORE

1 `select * from Bank_Muamalat.Products`

Query results SAVE RESULTS

JOB INFORMATION	RESULTS	CHART	JSON	EXECUTION DETAILS	EXECUTION GRAPH
Row	ProdNumber	ProdName	Category	Price	
1	BP101	All Eyes Drone Blueprint	1	9.99	
2	BP102	Bsquare Robot Blueprint	1	8.99	
3	BP104	Cat Robot Blueprint	1	4.99	
4	BP105	Creature Robot Arms Blueprint	1	12.0	
5	BP106	Hexacopter Drone Blueprint	1	8.99	
6	BP107	Ladybug Robot Blueprint	1	12.0	
7	BP108	Panda Robot Blueprint	1	7.99	
8	BP109	QuadroCopter Blueprint	1	10.99	
9	BP110	Sleepy Eye Blueprint	1	11.99	
10	BP111	Upside Down Robot Blueprint	1	12.0	
11	DK201	BYOD-100	2	54.0	

Results per page: 50 1 - 50 of 70

## Tabel ProductCategory

\*Untitled 3 RUN SAVE DOWNLOAD SHARE SCHEDULE

1 `select * from Bank_Muamalat.ProductCategory`

Query results SAVE RESULTS

JOB INFORMATION	RESULTS	CHART	JSON	EXECUTION DETAILS
Row	CategoryID	CategoryName	CategoryAbbreviation	
1	1	Blueprints	BP	
2	2	Drone Kits	DK	
3	3	Drones	DS	
4	4	eBooks	EB	
5	5	Robot Kits	RK	
6	6	Robots	RS	
7	7	Training Videos	TV	

## Tabel Customers

Untitled 3 ▶ RUN 📄 SAVE ▼ ⬇️ DOWNLOAD 👤 SHARE ▼ 🕒 SCHEDULE ⚙️ MORE ▼

✔️ Query completed.

```
1 select * from Bank_Muamalat.Customers
```

Press Alt+F1 for Accessibility Options

### Query results

📄 SAVE RESULTS ▼ 📊 EXPLORE DATA ▼ ↕

JOB INFORMATION		RESULTS	CHART	JSON	EXECUTION DETAILS	EXECUTION GRAPH	
Row	CustomerID	FirstName	LastName	CustomerEmail	CustomerPhone	CustomerAddress	
1	1590	Christophe	Meletti	cmelettifh@tripadvisor.com#mailto:cmelettifh@tripadvisor.com#	319-439-8722	50348 Milwaukee Plaza	
2	251	Arlyne	Ranklin	aranklin5e@xing.com#mailto:...	563-740-6575	114 Grover Avenue	
3	628	Carlie	Pala	cpala1d@mysql.com#mailto:c...	563-279-3211	765 Del Sol Way	
4	2042	Kaycee	Marshfield	kmarshfieldcs@jiathis.com#m...	563-329-5171	6048 Crescent Oaks Avenue	
5	1925	Ferguson	Rabb	frabb3h@t.co#mailto:frabb3h...	319-175-0676	52320 Ronald Regan Center	
6	159	Rosalind	Killik	rkillikej@sun.com#mailto:rkilli...	515-782-7623	967 Pankratz Avenue	
7	368	Sacha	Camlin	scamlin6x@chicagotribune.com#mailto:scamlin6x@chica	515-787-9311	12444 Texas Court	

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## Tabel Orders

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RUN
SAVE
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MORE

```
1 select * from Bank_Muamalat.Orders
```

Press

Query results SAVE RESULTS

JOB INFORMATION		RESULTS	CHART	JSON	EXECUTION DETAILS	EXECUTION GRAPH
Row	OrderID	Date	CustomerID	ProdNumber	Quantity	
1	1758	2021-01-15	923	BP101	1	
2	404	2020-03-26	1256	BP101	2	
3	575	2020-05-06	635	BP101	2	
4	1098	2020-08-25	1480	BP101	2	
5	1320	2020-10-10	534	BP101	2	
6	1755	2021-01-14	1564	BP101	2	
7	1756	2021-01-14	619	BP101	2	
8	2029	2021-03-11	827	BP101	2	
9	2870	2021-09-07	500	BP101	2	
10	3158	2021-11-21	379	BP101	2	
11	3183	2021-11-26	811	BP101	2	

Results per page: 50 1 - 50 of 3339

# Primary Key & Relationship

Berdasarkan preview dari masing-masing tabel maka ditentukan primary key nya adalah:

1. Primary Key tabel Customer: Kolom CustomerID
2. Primary Key tabel Products: Kolom ProdNumber
3. Primary Key tabel Orders: Kolom OrderID
4. Primary Key tabel ProductCategory: Kolom CategoryID

Relationship dari masing-masing tabel adalah sebagai berikut

1. Pada tabel Orders, kolom OrderID berperan sebagai Primary Key. Sedangkan kolom ProdNumber dan CustomerID berperan sebagai Foreign Key untuk menghubungkan tabel Products dan Customers dengan Tabel Orders
2. Pada tabel Products, kolom ProdNumber berperan sebagai Primary Key. Sementara kolom Category berperan sebagai Foreign Key untuk menghubungkan tabel ProductCategory dengan tabel Products.



# Query Master Table

```
create table Bank_Muamalat.TabelMaster as
select
a.Date as order_date,
b.CategoryName as category_name,
c.ProdName as product_name,
c.Price as product_price,
a.Quantity as order_qty,
c.Price*a.Quantity as total_sales,
d.CustomerEmail as cust_email,
d.CustomerCity as cust_city
from Bank_Muamalat.Orders as a
inner join Bank_Muamalat.Products as c on a.ProdNumber = c.ProdNumber
inner join Bank_Muamalat.ProductCategory as b on c.Category = b.CategoryID
inner join Bank_Muamalat.Customers as d on a.CustomerID = d.CustomerID
order by a.Date asc
```

## Hasil pembuatan tabel master:

### Query results

[SAVE RESULTS](#) [EXPLORE DATA](#)

JOB INFORMATION		RESULTS	CHART	JSON	EXECUTION DETAILS	EXECUTION 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#mailto:edew...	Honolulu
2	2020-01-01	eBooks	Polar Robots	23.99	2	47.98	fvaslerqt@comsenz.com#mail...	Jackson
3	2020-01-01	eBooks	SCARA Robots	19.5	5	97.5	llespercx@com.com#mailto:lle...	Des Moines
4	2020-01-01	eBooks	Spherical Robots	16.75	5	83.75	lfromonte9@de.vu#mailto:lfro...	Birmingham
5	2020-01-01	Robots	RWW-75 Robot	883.0	3	2649.0	tmckernot@tinyurl.com#mailt...	Katy
6	2020-01-01	Training Videos	Drone Video Techniques	37.99	6	227.94	gstiggersdd@eventbrite.com#mailto: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	jzellick84@ustream.tv#mailto:j...	Washington
9	2020-01-02	Drones	DTE-QFN20 Drone	250.0	2	500.0	jcolthurstgu@cbsnews.com#...	Sacramento
10	2020-01-02	eBooks	Fixed Wing Drones	15.5	3	46.5	ohalbardy@booking.com#mai...	Birmingham
11	2020-01-02	Robot Kits	BYOR-2640S	189.0	2	378.0	aguiongo@behance.net#mailt...	Houston
12	2020-01-02	Robot Kits	BYOR-2640S	189.0	2	378.0	gmirrlees4v@state.tx.us#mailt...	Washington
13	2020-01-02	Robot Kits	BYOR-3000	214.0	2	428.0	croylede@dot.gov#mailto:croy...	Virginia Beach
14	2020-01-02	Training Videos	Drone Video Techniques	37.99	2	75.98	lgatenbyel@quantcast.com#m...	Des Moines

# Visualization

## Transaction Detail Dashboard

Customer City ▾

Category Name ▾

Total Sales

1.754.751

Total Quantity

11.654

Highest Price

899

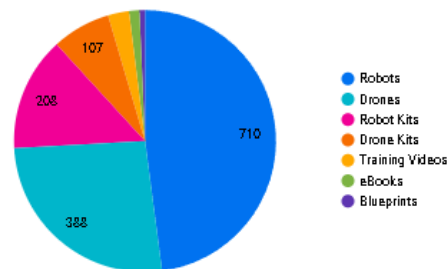
Lowest Price

5

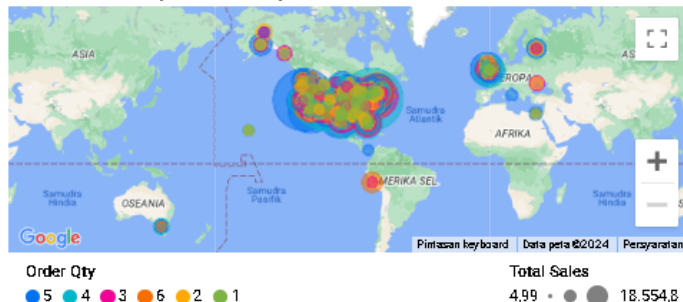
Average Price

149

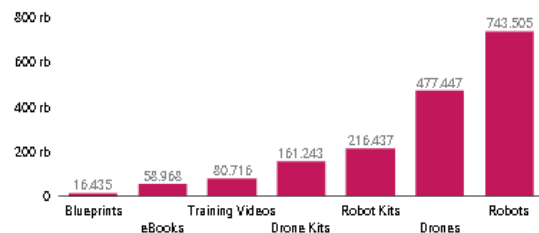
Average Price Each Category



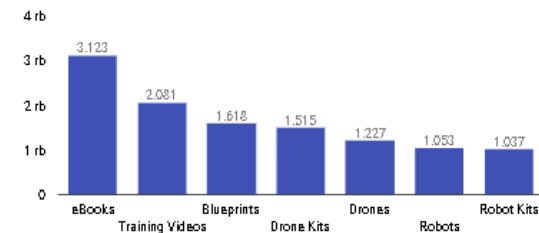
Sales & Quantity in Each City



Top Category with Highest Sales

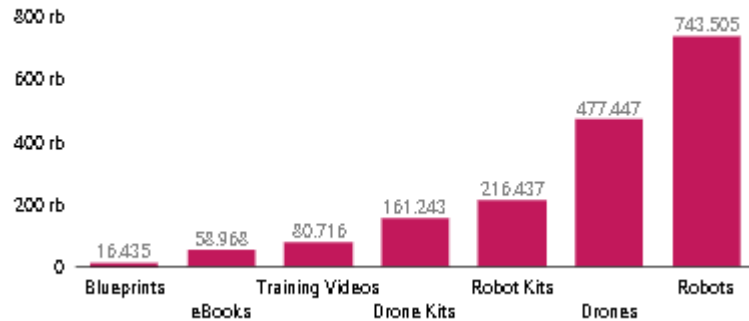


Top Category with Highest Quantity

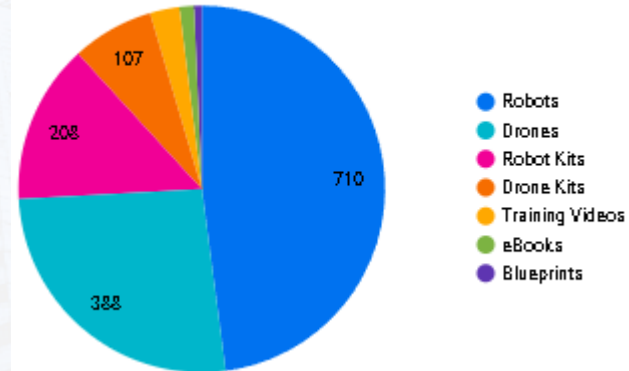


# Insight

Top Category with Highest Sales



Average Price Each Category



Berdasarkan visualisasi data diatas dapat diketahui ketegori dengan penjualan tertinggi adalah robots, yang mana kategori tersebut memiliki rata-rata harga tertinggi dibandingkan dengan kategori lainnya. Dari kesimpulan tersebut maka saya mempunyai usulan untuk membuat gudang yang dapat menampung banyak barang berkategori robots dengan tingkat keamanan dan pencegahan kerusakan yang tinggi, mengingat harga dari kategori tersebut relatif mahal maka diperlukan penjagaan yang ketat hingga barang sampai ketangan pembeli.

# Access Link

## **Dashboard:**

<https://lookerstudio.google.com/reporting/dafaf65a-b0b3-4690-b518-3b4793e3662f>

## **Github:**

[muhammadjilham/FinalTask\\_Bank-Muamalat\\_BI-Analyst\\_Muhammad-Jilham \(github.com\)](https://github.com/muhammadjilham/FinalTask_Bank-Muamalat_BI-Analyst_Muhammad-Jilham)

# Thank You



X



Bank  
Muamalat