

# **Final Task**

Bank Muammalat Bussines Intelegence Analyst

Presented by Muhammad Andrian Bhakti Maulana



# Muhammad Andrian Bhakti Maulana

#### **About Me**

Mahasiswa Teknik Informatika di Universitas Nusantara PGRI Kediri dengan minat besar dalam dunia pemrograman, terutama di bidang Data Science. Saat ini mengikuti kelas Bank Muamalat Business Intelligence Analyst untuk memperdalam pemahaman tentang analisis data dan penerapannya dalam dunia bisnis.



#### **My Experience**

Experience 1
Mahasiwa Teknik Informatika di
Universitas Nusantara PGRI Kediri

Experience 2MSIB Batch 7 tahun 2024 di Rakamin



#### Soal 1

Tentukan masing-masing primary key pada 4 dataset penjualan

- 1. Primary key tabel Customer:
- 2. Primary key tabel Products:
- 3. Primary key tabel Orders:
- 4. Primary key tabel ProductCategory:



### **Tabel Customers**

|   | Α          | В         | С          | D   | E              | F                       | G 🔺          |
|---|------------|-----------|------------|---|----------------|-------------------------|--------------|
| 1 | CustomerID | FirstName | LastName   | CustomerEmail   | CustomerPhone  | CustomerAddress         | CustomerCif  |
| 2 | 1          | Grazia    | Rasmus     | grasmusas@i2i.jp#mailto:grasmusas@i2i.jp#                                 | (202) 577-2595 | 628 Buhler Junction     | Washington   |
| 3 | 2          | Bunny     | Trevan     | btrevanmj@wordpress.org#mailto:btrevanmj@wordpress.org#                   | 917-903-2827   | 52 Cascade Drive        | Jamaica      |
| 4 | 3          | Tracie    | Grayston   | tgrayston7k@pagesperso-orange.fr#mailto:tgrayston7k@pagesperso-orange.fr# | 404-868-2391   | 672 Comanche Way        | Atlanta      |
| 5 | 4          | Amerigo   | Garrelts   | agarrelts6e@oaic.gov.au#mailto:agarrelts6e@oaic.gov.au#                   | 415-190-3290   | 8252 Village Green Hill | San Francisc |
| 6 | 5          | Shea      | Stronghill | sstronghillc1@google.nl#mailto:sstronghillc1@google.nl#                   | 432-775-7828   | 542 3rd Point           | Midland      |
| 7 | 6          | Geoffry   | Bonde      | gbonde90@vimeo.com#mailto:gbonde90@vimeo.com#                             | 415-176-9919   | 781 Larry Place         | San Francisc |
| 8 | 7          | Noelle    | Carlile    | ncarlile37@mit.edu#mailto:ncarlile37@mit.edu#                             | 405-745-9826   | 539 Crowley Parkway     | Oklahoma Ci  |

Primary key table Customers: CustomerID



# **Tabel Products**

| 1 | Α          | В                             | С        | D     | Е |
|---|------------|-------------------------------|----------|-------|---|
| 1 | ProdNumber | ProdName                      | Category | Price |   |
| 2 | BP101      | All Eyes Drone Blueprint      | 1        | 9,99  |   |
| 3 | BP102      | Bsquare Robot Blueprint       | 1        | 8,99  |   |
| 4 | BP104      | Cat Robot Blueprint           | 1        | 4,99  |   |
| 5 | BP105      | Creature Robot Arms Blueprint | 1        | 12,00 |   |
| 6 | BP106      | Hexacopter Drone Blueprint    | 1        | 8,99  |   |
| 7 | BP107      | Ladybug Robot Blueprint       | 1        | 12,00 |   |
| 8 | BP108      | Panda Robot Blueprint         | 1        | 7.99  |   |

Primary key table Products: ProdNumber



## **Tabel Orders**

| 4  | Α       | В          | С          | D          | E        | F |
|----|---------|------------|------------|------------|----------|---|
| 1  | OrderID | Date       | CustomerID | ProdNumber | Quantity |   |
| 2  | 1       | 01/01/2020 | 1866       | EB514      | 2        |   |
| 3  | 2       | 01/01/2020 | 1567       | RS706      | 3        |   |
| 4  | 3       | 01/01/2020 | 2064       | TV804      | 6        |   |
| 5  | 4       | 01/01/2020 | 287        | DK203      | 1        |   |
| 6  | 5       | 01/01/2020 | 422        | EB517      | 5        |   |
| 7  | 6       | 01/01/2020 | 954        | EB519      | 5        |   |
| 8  | 7       | 02/01/2020 | 726        | RK604      | 2        |   |
| 9  | 8       | 02/01/2020 | 1740       | TV810      | 1        |   |
| 10 | 9       | 02/01/2020 | 1652       | TV804      | 2        |   |
| 11 | 10      | 02/01/2020 | 1431       | DS304      | 2        |   |

Primary key table Orders: OrderID



# **Tabel ProductCategory**

| 4 | Α          | В               | С                    | D |
|---|------------|-----------------|----------------------|---|
| 1 | CategoryID | CategoryName    | CategoryAbbreviation |   |
| 2 | 1          | Blueprints      | BP                   |   |
| 3 | 2          | Drone Kits      | DK                   |   |
| 4 | 3          | Drones          | DS                   |   |
| 5 | 4          | eBooks          | EB                   |   |
| 6 | 5          | Robot Kits      | RK                   |   |
| 7 | 6          | Robots          | RS                   |   |
| 8 | 7          | Training Videos | TV                   |   |

Primary key table ProductCategory: CategoryID



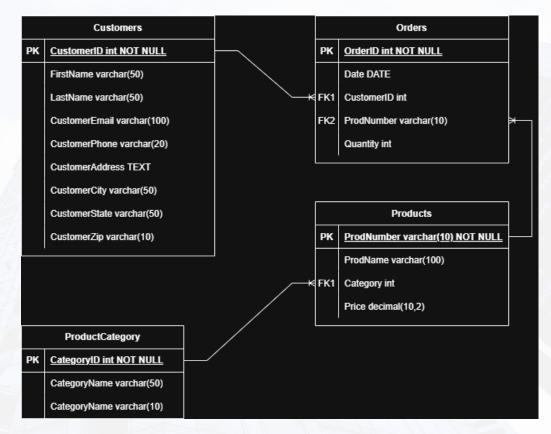
## Soal 2

Tentukan relationship dari ke-4 table tersebut



## **Relationship Dataset**

- Customers (1)  $\rightarrow$  (M) Orders
- Products (1)  $\rightarrow$  (M) Orders
- ProductCategory (1) → (M) Products



#### Rakamin Academy

#### Soal 3

Sebagai BI Analyst PT Sejahtera Bersama, kita akan membuat sebuah table master yang berisikan informasi:

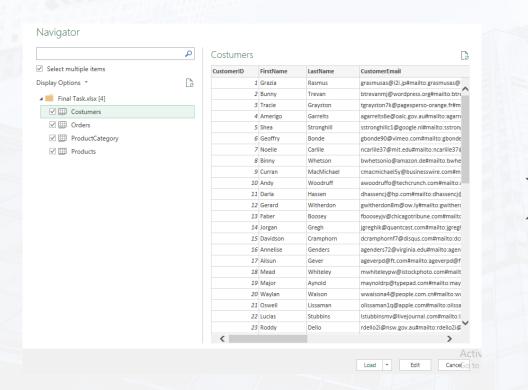
- CustomerEmail (cust email)
- CustomerCity (cust city)
- OrderDate (order date)
- OrderQty (order qty)
- ProductName (product name)
- ProductPrice (product price)
- ProductCategoryName (category name)
- TotalSales (total sales)

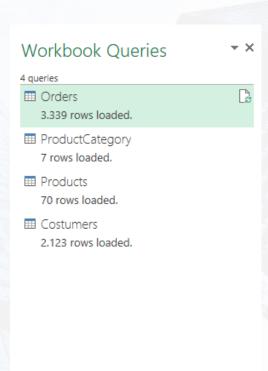
Urutkan data tersebut berdasarkan tanggal transaksi yang paling awal sampai yang paling akhir. Posisi kolom mengikuti contoh berikut ini :

| 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.co     | Honolulu    |
| 2     | 2020-01-01      | eBooks          | Polar Robots      | 23.99              | 2           | 47.98         | fvaslerqt@co    | Jackson     |
| 3     | 2020-01-01      | Robots          | RWW-75 Robot      | 883.0              | 3           | 2649.0        | tmckernot@ti    | Katy        |



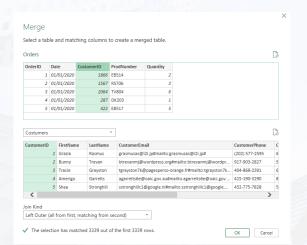
# **Import to Power Query**

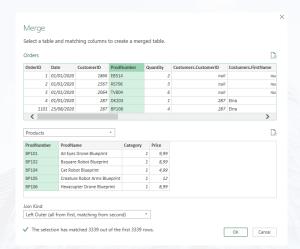


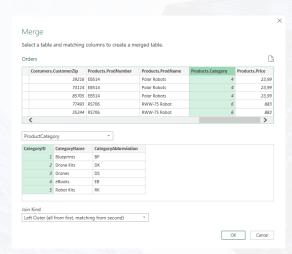




# **Merge Query**



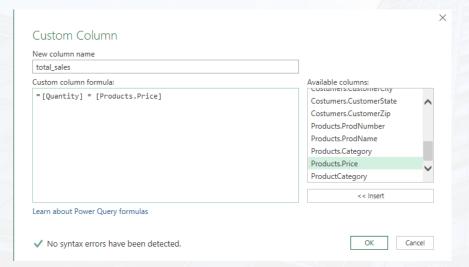






### **Add Column**

| 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          | dew@nba.co   | Honolulu    |
| 2     | 2020-01-01      | eBooks          | Polar Robots   | 23.99           | 2         | 47.98         | f/aslerqt@co | Jackson     |
| 3     | 2020-01-01      | Robots          | RWW-75 Robot   | 883.0           | 3         | 2649.0        | tmckernot@ti | Katy        |

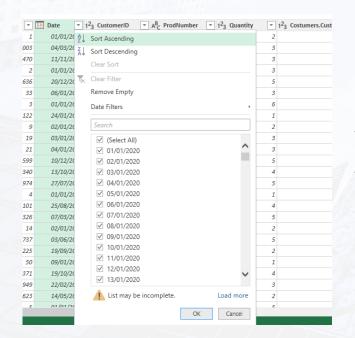


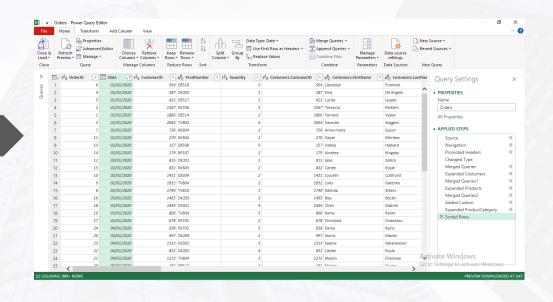


| ■ ProductCategory | 4114 | ABC<br>123 | total_sales | _      |
|-------------------|------|------------|-------------|--------|
| Table             |      |            |             | 47,98  |
| Table             |      |            |             | 71,97  |
| Table             |      |            |             | 71,97  |
| Table             |      |            |             | 2649   |
| Table             |      |            |             | 4415   |
| Table             |      |            |             | 2649   |
| Table             |      |            |             | 227,94 |
| Table             |      |            |             | 37,99  |
| Table             |      |            |             | 75,98  |



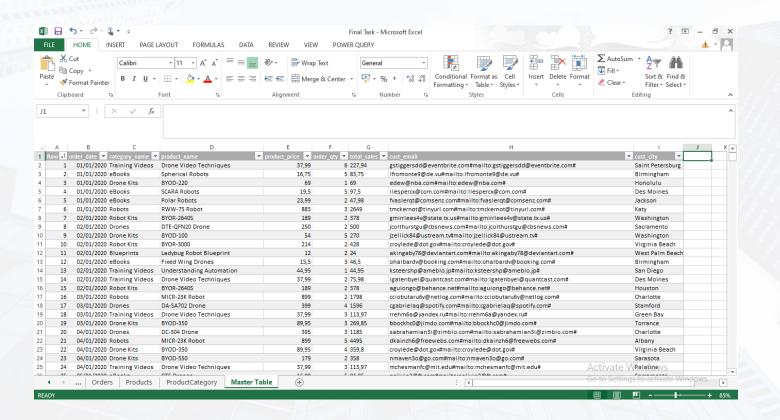
#### **Sort Data OrderDate**







#### Result





#### Soal 4

Dari hasil tabel yang dibuat pada soal nomor 3, simpanlah hasilnya dalam bentuk CSV. Dengan menggunakan Looker Studio, buatlah visualisasi yang menampilkan data penjualan tersebut. Visualisasi tersebut harus berisi minimal :

- Total keseluruhan sales
- Total keseluruhan sales berdasarkan kategori produk
- Total keseluruhan qty berdasarkan kategori produk
- Total sales berdasarkan kota
- Total qty berdasarkan kota
- Top 5 kategori produk yang paling tinggi salesnya
- Top 5 kategori produk yang paling tinggi qtynya



# **Export CSV**

| 4   | Α          | В        |          | С      |        | D       | Е        |          | F      | G         | H          | 1      | 1          | J           | K            | L            | M          | N           | О       |  |
|-----|------------|----------|----------|--------|--------|---------|----------|----------|--------|-----------|------------|--------|------------|-------------|--------------|--------------|------------|-------------|---------|--|
| 1   | Row,orde   | _date,   | catego   | ory_na | me,p   | oduct   | name,    | oroduc   | t_pric | e,order_  | qty,total  | l_sale | s,cust_en  | nail,cust_  | city         |              |            |             |         |  |
| 2   | 1,1/1/2020 | ,Traini  | ng Vid   | eos,D  | rone \ | /ideo 1 | echniq   | ues,37   | 99,6,2 | 27.94,gs  | tiggersd   | d@ev   | entbrite.  | com#mail    | lto:gstigger | sdd@event    | brite.com  | #,Saint Pet | ersburg |  |
| 3   | 2,1/1/2020 | ,eBool   | ks,Sph   | erical | Robot  | s,16.75 | ,5,83.75 | ,lfrom   | onte   | @de.vu    | #mailto:l  | lfrom  | onte9@d    | e.vu#,Birr  | ningham      |              |            |             |         |  |
| 4   | 3,1/1/2020 | ),Drone  | Kits,E   | SYOD-  | 220,69 | ,1,69,€ | dew@r    | ba.cor   | n#ma   | ilto:ede  | w@nba.d    | com#,  | Honolulu   |             |              |              |            |             |         |  |
| 5   | 4,1/1/2020 | ,eBool   | ks,SCA   | RA Ro  | bots,1 | 9.5,5,9 | 7.5,lles | percx@   | com.   | com#ma    | ilto:lles  | percx  | @com.co    | n#,Des M    | oines        |              |            |             |         |  |
| 6   | 5,1/1/2020 | ,eBool   | ks,Pola  | ar Rob | ots,23 | .99,2,4 | 7.98,fva | slerqt   | @com   | senz.co   | n#mailto   | :fvas  | lerqt@co   | msenz.co    | m#,Jackson   | ı            |            |             |         |  |
| 7   | 6,1/1/2020 | ,Robo    | ts,RWV   | N-75 F | Robot, | 883,3,2 | 649,tm   | ckerno   | t@tin  | yurl.com  | #mailto:   | tmck   | ernot@tir  | yurl.com    | #,Katy       |              |            |             |         |  |
| 8   | 7,1/2/2020 | ,Robo    | t Kits,B | YOR-2  | 2640S, | 189,2,3 | 78,gmii  | rlees4   | v@sta  | te.tx.us  | #mailto:g  | gmirr  | lees4v@s   | ate.tx.us   | #,Washingt   | ton          |            |             |         |  |
| 9   | 8,1/2/2020 | ),Drone  | es,DTE-  | -QFN2  | 0 Dro  | ne,250  | 2,500,jc | olthur   | stgu@  | cbsnew    | s.com#m    | nailto | jcolthurst | gu@cbsn     | ews.com#,    | Sacramento   | )          |             |         |  |
| 10  | 9,1/2/2020 | ),Drone  | Kits,E   | BYOD-  | 100,54 | ,5,270, | jzellick | 34@us    | tream  | .tv#mail  | to:jzellic | k84@   | ustream.   | v#,Washi    | ington       |              |            |             |         |  |
| -11 | 10,1/2/202 | 20,Rob   | ot Kits, | BYOR   | -3000, | 214,2,4 | 28,croy  | lede@    | dot.go | ov#mailt  | o:croyle   | de@d   | dot.gov#,\ | 'irginia Be | each         |              |            |             |         |  |
| 12  | 11,1/2/202 | 20,Blue  | prints,  | Ladyb  | oug Ro | bot Blu | ieprint, | 12,2,24  | ,akin  | gaby78@   | devianta   | art.co | m#mailto   | akingaby:   | 78@deviar    | ntart.com#,\ | Nest Palm  | Beach       |         |  |
| 13  | 12,1/2/202 | 20,eBo   | oks,Fix  | ed Wi  | ing Dr | ones,1  | 5.5,3,46 | .5,ohal  | bardv  | @booki    | ng.com#r   | mailt  | o:ohalbar  | dv@book     | ing.com#,B   | irmingham    |            |             |         |  |
| 14  | 13,1/2/202 | 20,Trair | ning Vi  | deos,  | Under  | standi  | ng Auto  | matior   | ,44.9  | 5,1,44.95 | ksteers,   | hp@a   | meblo.jp   | #mailto:k   | steershp@    | ameblo.jp#   | San Diego, |             |         |  |
| 15  | 14,1/2/202 | 0,Trair  | ning Vi  | deos,  | Drone  | Video   | Techni   | ques,3   | 7.99,2 | ,75.98,lg | atenbyel   | l@qu   | antcast.co | m#mailto    | :Igatenbye   | el@quantca   | st.com#,De | es Moines   |         |  |
| 16  | 15,1/2/202 | 20,Rob   | ot Kits, | BYOR   | -26409 | ,189,2  | 378,agu  | iongo    | @beh   | ance.ne   | t#mailto:  | aguio  | ongo@bel   | nance.net   | #,Houston    |              |            |             |         |  |
| 17  | 16,1/3/202 | 20,Rob   | ots,MI   | CR-231 | ( Robo | t,899,  | 2,1798,c | ciobut   | aru6v  | @netlog   | .com#ma    | ailto: | cciobutaru | 6v@netlo    | og.com#,Ch   | arlotte      |            |             |         |  |
| 18  | 17,1/3/202 | 0,Dror   | ies,DA   | -SA70  | 2 Dror | ie,399, | 4,1596,0 | gabrie   | laq@   | spotify.c | om#mail    | lto:cg | abrielaq@  | spotify.c   | om#,Stamf    | ord          |            |             |         |  |
| 19  | 18,1/3/202 | 0,Trair  | ning Vi  | deos,  | Drone  | Video   | Techni   | ques,3   | 7.99,3 | ,113.97,r | rehm6a@    | @yan   | dex.ru#ma  | ailto:rreh  | m6a@yand     | ex.ru#,Gree  | en Bay     |             |         |  |
| 20  | 19,1/3/202 | 0,Dror   | ne Kits, | BYOD   | -350,8 | 9.95,3, | 269.85,  | bockh    | ıc0@ji | mdo.co    | n#mailto   | :bbo   | ckhc0@jir  | ndo.com#    | t,Torrance   |              |            |             |         |  |
| 21  | 20,1/4/202 | 0,Dror   | ies,DC   | -304 D | rone,  | 395,3,1 | 185,sab  | raham    | ian3i@ | zimbio    | .com#ma    | ilto:s | abrahami   | an3i@zin    | nbio.com#,   | Charlotte    |            |             |         |  |
| 12  | 21 1/4/201 |          | ster Ta  |        |        | +)      | 4405 -   | المستحما | co     |           |            | اممطاة | اعطمستميا  | £           |              |              | : 4        |             |         |  |
|     | , ,        | IVId     | stef la  | ibie   | -      | シ       |          |          |        |           |            |        |            |             |              |              | : 4        |             |         |  |





Total Sales Keseluruhan

total\_sales

1.754.750,57

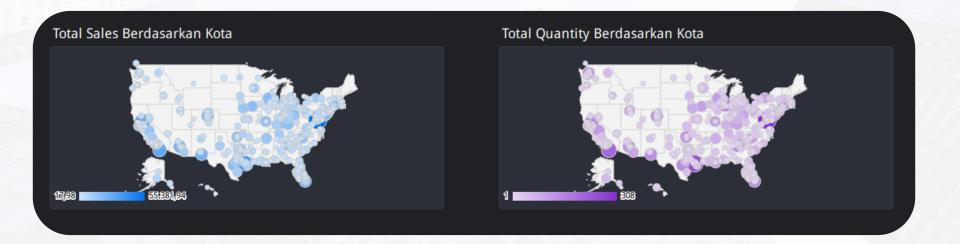


### **Visualization**



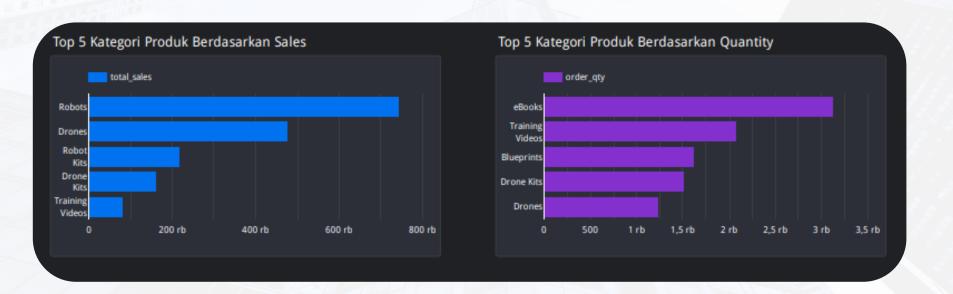








### **Visualization**





### Soal 5

Sebagai BI analyst PT Sejahtera Bersama, apa yang bisa anda usulkan untuk mempertahankan penjualan ataupun menaikkan penjualan dengan tabel transaksi detail yang sudah ada?



#### Strategi Optimalisasi Penjualan eBooks



#### Insight:

- eBooks memiliki jumlah unit terjual tinggi (3.1 ribu), tetapi kontribusi terhadap pendapatan rendah.
- Kemungkinan harga eBooks terlalu rendah atau margin keuntungan kecil.

#### Rekomendasi:

- Evaluasi harga eBooks untuk melihat apakah ada peluang menaikkan harga tanpa mengurangi permintaan.
- Buat promo diskon berjenjang, misalnya "Beli 3 eBooks, gratis 1."
- Tawarkan diskon khusus atau promo paket untuk meningkatkan volume penjualan produk dengan margin tinggi.
- Gunakan bundling, kombinasikan eBooks dengan produk fisik seperti Training Videos atau Blueprints untuk meningkatkan nilai transaksi. Contoh: "Beli 2 eBooks, dapatkan diskon 50% untuk Training Video."



Strategi Optimalisasi Penjualan pada Robots & Drones, Bundling Blueprints

|    | category_name   | total_sales | order_qty |
|----|-----------------|-------------|-----------|
| 1. | Robots          | 42,37%      | 1.053     |
| 2. | Drones          | 27,21%      | 1.227     |
| 3. | Robot Kits      | 12,33%      | 1.037     |
| 4. | Drone Kits      | 9,19%       | 1.515     |
| 5. | Training Videos | 4,6%        | 2.081     |
| 6. | eBooks          | 3,36%       | 3.123     |
| 7. | Blueprints      | 0,94%       | 1.618     |

#### Insight:

- Robots dan Drones menyumbang 69,56% dari total penjualan, menjadikannya kategori utama yang paling berkontribusi terhadap pendapatan.
- Blueprints hanya berkontribusi 0,94% terhadap total sales, meskipun jumlah unit terjualnya tetap stabil.

#### Rekomendasi:

- Fokuskan stok dan promosi pada Robots dan Drones untuk mempertahankan kontribusi besar mereka terhadap pendapatan.
- Gunakan strategi bundling Blueprints sebagai bonus gratis dengan pembelian Robot Kits atau Drone Kits untuk meningkatkan nilai transaksi.
- Optimalkan harga dan strategi upselling Blueprints, misalnya menawarkan diskon jika dibeli bersama produk lain.



# **Link Github & Looker Studio**

https://github.com/andrnnnn/analyst-sales

https://lookerstudio.google.com/reporting/e0347a53-80f6-43ec-b6b5-361c9b3f3dab



# **Link Video Presentation**

https://drive.google.com/drive/folders/1zimbjBsn2pNm5cqaYegxUNvPplhyuQ4t?usp=sharing

# **Thank You**





