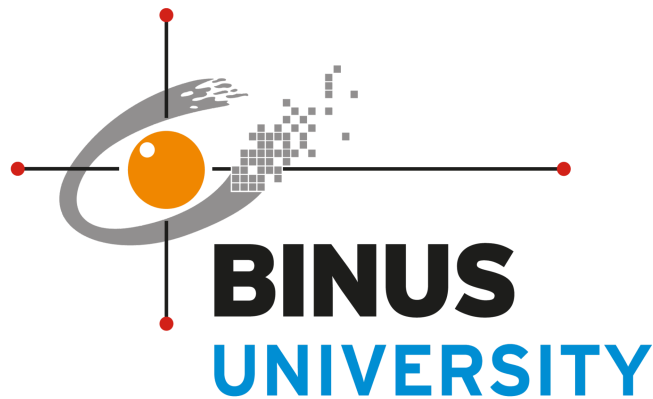


AOL Database Systems  
**Mega Manunggal Property Warehouse Management System**



**Kelompok 8**

Aradhana Indra Daniswara	2401955132
Immanuel Tio	2401959194
Thomas Amarta Gunawisesa	2401960763
Jasson Laurent	2401961551
Cameron Jane Victoria	2440007024
Stephanie Adhisaputra	2440033880

Bina Nusantara University  
Alam Sutera

LINK .sql dan word dari DDL, insert, dan contoh querynya :  
[https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

## Business Idea

---



Mega Manunggal Property Tbk (“MMP”) penyedia jasa **sewa gudang** pintar logistik dan gedung perkantoran modern yang dibangun dengan baik di Indonesia.

Industri : Jasa penyewaan gudang / Warehouse

Mega Manunggal Property melakukan beberapa operasi yang memerlukan bantuan sebuah database untuk mendata :

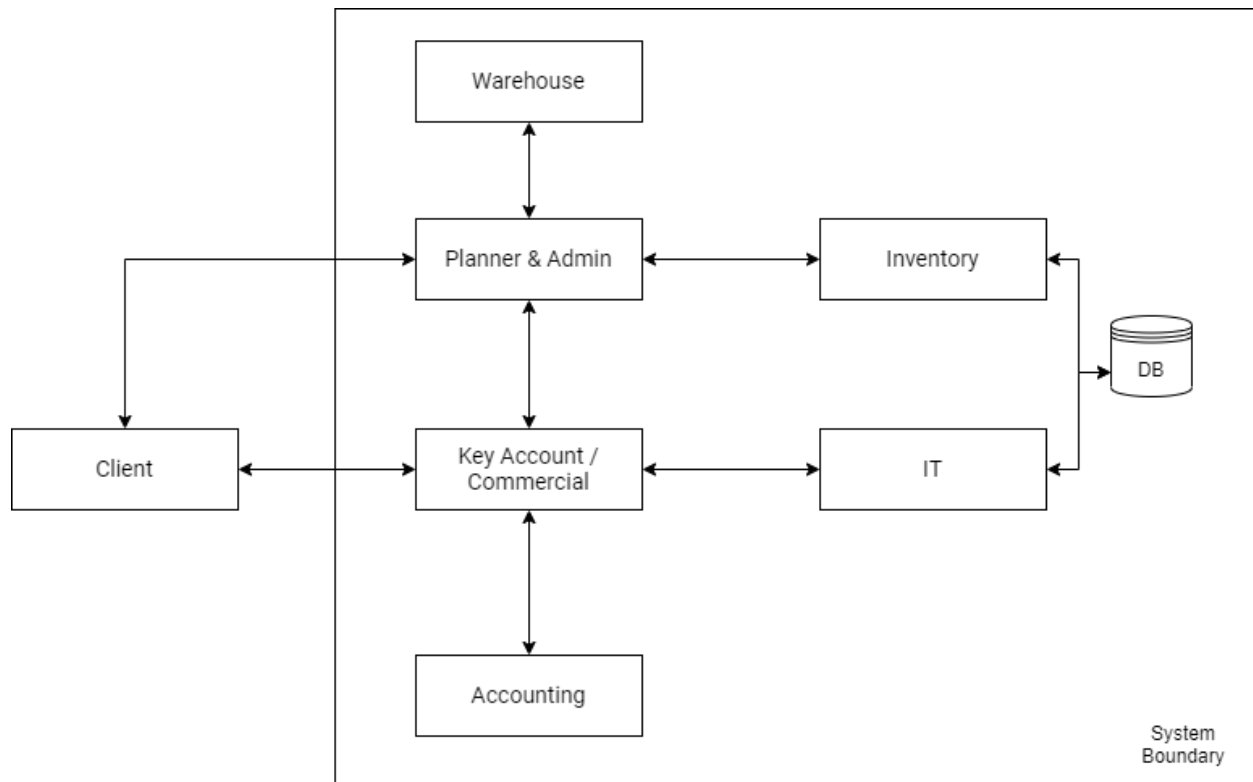
- *Client-client* Mega Manunggal Property
- Staff yang ada di Mega Manunggal Property
- Barang client yang masuk dan keluar
- Lot yang dimiliki oleh client Mega Manunggal Property

*LINK .sql dan word dari DDL, insert, dan contoh querynya :*

[https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

# System Definition

---



LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

## Database Objective

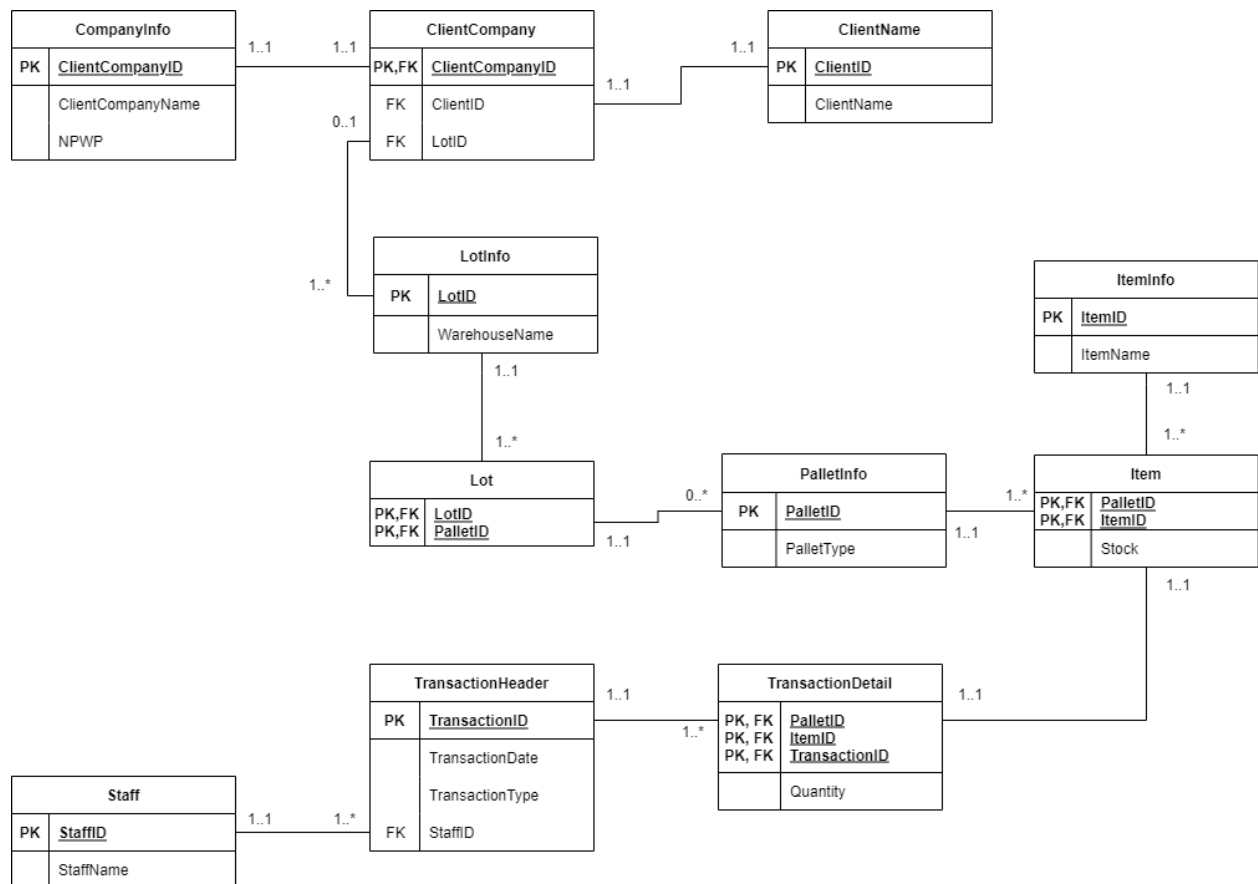
---

- Mendata client baru yang registrasi
- Set sebuah lot yang dialokasikan khusus untuk sebuah client
- Mendata barang yang masuk / keluar warehouse
- Mendata staff yang bertanggung jawab atas suatu transaksi

*LINK .sql dan word dari DDL, insert, dan contoh querynya :*

[https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

# Entity Relation Diagram (ERD)



Ketentuan sistem Mega Manunggal Property :

1. **Satu client** hanya memiliki **satu lot**
2. **Satu lot** bisa memiliki **satu atau banyak pallet**
3. **Satu pallet** hanya bisa menyimpan **banyak tipe item**
4. **Satu item** bisa ditempatkan dalam **banyak pallet berbeda**  
(Relation antara Pallet dan Item adalah *many to many*)

LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

# Normalization

---

## UNF

Transaction = **@ClientCompanyID**, ClientCompanyName, ClientName, NPWP, **{@TransactionID}**, TransactionDate, TransactionType, StaffName, LotID, PalletID, PalletType, WarehouseName, ItemName, Stock}

## 1NF

Transaction = **@ClientCompanyID**, ClientCompanyName, ClientName, NPWP, **@TransactionID**, TransactionDate, TransactionType, StaffName, LotID, PalletID, PalletType, WarehouseName, ItemName, Stock

## 2NF :

CompanyInfo = (**@ClientCompanyID**, ClientCompanyName, NPWP, ClientName, LotID, WarehouseName)

PalletInfo = (**@PalletID**, PalletType)

Item = (**@PalletID**, **@LotID**, ItemName, Stock)

Transaction = (**@TransaccionID**, PalletID, LotID, TransactionDate, TransactionType, StaffID, StaffName)

## 3NF :

CompanyInfo = (**@ClientCompanyID**, ClientCompanyName, NPWP)

ClientName = (**@ClientID**, ClientName)

ClientCompany = (**@ClientCompanyID**, ClientID, LotID)

LotInfo = (**@LotID**, WarehouseName)

Lot = (**@LotID**, **@PalletID**) ⇒ *Joining Table*

PalletInfo = (**@PalletID**, PalletType)

Item = (**@PalletID**, **@ItemID**) ⇒ *Joining Table*

ItemInfo = (**@ItemID**, ItemName)

TransactionDetail = (**@PalletID**, **@ItemID**, **@TransactionID**, Quantity)

TransactionHeader = (**@TransaccionID**, TransactionDate, TransactionType, StaffID)

Staff = (**@StaffID**, StaffName)

LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

# Data Definition Language (DDL) with SQL Server

```
CREATE DATABASE MMPDB
GO
USE MMPDB
CREATE TABLE Staff(
    StaffID CHAR(5) PRIMARY KEY CHECK(StaffID LIKE 'ST[0-9][0-9][0-9]'),
    StaffName VARCHAR(255) NOT NULL
)
CREATE TABLE CompanyInfo(
    ClientCompanyID CHAR(6) PRIMARY KEY CHECK (ClientCompanyID LIKE
'CCI[0-9][0-9][0-9]'),
    ClientCompanyName VARCHAR(255) NOT NULL,
    NPWP CHAR(20) CHECK(NPWP LIKE
'[0-9][0-9].[0-9][0-9][0-9].[0-9][0-9][0-9].[0-9]-[0-9][0-9][0-9].[0-9][0-9][0-9]')NOT
NULL
)
CREATE TABLE ClientName(
    ClientID CHAR(5) PRIMARY KEY CHECK(ClientID like 'CI[0-9][0-9][0-9]'),
    ClientName VARCHAR(255) NOT NULL
)
CREATE TABLE PalletInfo(
    PalletID CHAR(5) PRIMARY KEY CHECK (PalletID LIKE 'PI[0-9][0-9][0-9]'),
    PalletType VARCHAR(10) CHECK (PalletType IN
('Regular','Sealed','Freezer','Chiller'))NOT NULL,
)
CREATE TABLE LotInfo(
    LotID CHAR (5) PRIMARY KEY CHECK (LotID LIKE 'LI[0-9][0-9][0-9]'),
    WarehouseName VARCHAR(255)NOT NULL
)
CREATE TABLE ItemInfo(
    ItemID CHAR (5) PRIMARY KEY CHECK(ItemID LIKE 'II[0-9][0-9][0-9]'),
    ItemName VARCHAR(255) NOT NULL
)
CREATE TABLE Item(
    PalletID CHAR(5) FOREIGN KEY REFERENCES PalletInfo(PalletID) ON UPDATE CASCADE
ON DELETE CASCADE,
    ItemID CHAR(5) FOREIGN KEY REFERENCES ItemInfo(ItemID) ON UPDATE CASCADE ON
DELETE CASCADE,
    Stock INT NOT NULL
    PRIMARY KEY(PalletID,ItemID)
)
CREATE TABLE Lot(
    PalletID CHAR(5) FOREIGN KEY REFERENCES PalletInfo(PalletID)ON UPDATE CASCADE ON
DELETE CASCADE,
    LotID CHAR(5) FOREIGN KEY REFERENCES LotInfo(LotID)ON UPDATE CASCADE ON DELETE
CASCADE,
    PRIMARY KEY (PalletID,LotID)
)
CREATE TABLE TransactionHeader(
    TransactionID CHAR (5)PRIMARY KEY CHECK(TransactionID LIKE 'TI[0-9][0-9][0-9]'),
    TransactionDate DATE NOT NULL,
    TransactionType CHAR (8)CHECK(TransactionType IN('INBOUND','OUTBOUND'))NOT NULL,
    StaffID CHAR(5) FOREIGN KEY REFERENCES Staff(StaffID)ON UPDATE CASCADE ON DELETE
CASCADE
```

LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

```

)
CREATE TABLE TransactionDetail(
    PalletID CHAR(5),
    ItemID CHAR(5),
    Quantity INT NOT NULL,
    TransactionID CHAR (5) FOREIGN KEY REFERENCES
TransactionHeader(TransactionID)NOT NULL,
    FOREIGN KEY (PalletID, ItemID) REFERENCES Item(PalletID, ItemID)ON UPDATE
CASCADE ON DELETE CASCADE,
    PRIMARY KEY(PalletID,ItemID,TransactionId)
)
CREATE TABLE ClientCompany(
    ClientCompanyID CHAR (6)FOREIGN KEY REFERENCES CompanyInfo(ClientCompanyID)ON
UPDATE CASCADE ON DELETE CASCADE,
    ClientID CHAR(5)FOREIGN KEY REFERENCES ClientName(ClientID)ON UPDATE CASCADE ON
DELETE CASCADE,
    LotID CHAR(5)FOREIGN KEY REFERENCES LotInfo(LotID)ON UPDATE CASCADE ON DELETE
CASCADE,
    PRIMARY KEY(ClientCompanyID)
)

```

## Insert all data of MMP (DDL)

```

INSERT INTO CompanyInfo VALUES
('CCI001','SidoKeluar','08.178.554.2-123.321'),
('CCI002','Saripalsu','07.162.235.1-209.170'),
('CCI003','Sisimaju','21.313.892.7-621.912'),
('CCI004','Sasamundur','76.921.876.5-129.931'),
('CCI005','Orang Muda','12.121.123.2-119.807')

```

```

INSERT INTO ClientName VALUES
('CI001','Indra Daniswiri'),
('CI002','Lemina Tewi'),
('CI003','Ria Richoco'),
('CI004','Tukul Perairan'),
('CI005','Tutu Matiti')

```

```

INSERT INTO LotInfo VALUES
('LI001','MMP Jakarta'),
('LI002','MMP Jakarta'),
('LI003','MMP Jakarta'),
('LI004','MMP Cikarang'),
('LI005','MMP Cilengsi'),
('LI006','MMP Bogor'),
('LI007','MMP Depok'),
('LI008','MMP Surabaya')

```

```

INSERT INTO ClientCompany VALUES
('CCI001','CI001','LI001'),
('CCI002','CI002','LI002'),
('CCI003','CI003','LI003'),

```

LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)



```
('CCI004','CI004','LI004'),  
('CCI005','CI005','LI005')
```

```
INSERT INTO Staff VALUES
```

```
('ST001','Budi Suwaringsih'),  
('ST002','Siti Semirwih'),  
('ST003','Agus Sudarsono'),  
('ST005','Sani Susanto'),  
('ST004','Ivan Gunalos')
```

```
INSERT INTO PalletInfo VALUES
```

```
('PI001','Regular'),  
('PI002','Sealed'),  
('PI003','Freezer'),  
('PI004','Chiller'),  
('PI005','Regular'),  
('PI006','Regular'),  
('PI007','Sealed'),  
('PI008','Freezer'),  
('PI009','Chiller'),  
('PI010','Regular'),  
('PI011','Regular'),  
('PI012','Sealed'),  
('PI013','Freezer'),  
('PI014','Chiller'),  
('PI015','Regular'),  
('PI016','Regular'),  
('PI017','Sealed'),  
('PI018','Freezer'),  
('PI019','Chiller'),  
('PI020','Regular')
```

```
INSERT INTO Lot VALUES
```

```
('PI001','LI001'),  
('PI002','LI001'),  
('PI003','LI001'),  
('PI004','LI001'),  
('PI005','LI002'),  
('PI006','LI002'),  
('PI007','LI002'),  
('PI008','LI002'),  
('PI009','LI003'),  
('PI010','LI003'),  
('PI011','LI003'),  
('PI012','LI003'),  
('PI013','LI004'),  
('PI014','LI004'),  
('PI015','LI004'),  
('PI016','LI004'),  
('PI017','LI005'),  
('PI018','LI005'),  
('PI019','LI005'),  
('PI020','LI005')
```

```
INSERT INTO ItemInfo VALUES
```

```
('II001','Orea Choco Cookies'),  
('II002','Sosis not So Nice'),
```

LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

```
( 'II003', 'Larutan Cap Kaki Ibu'),
( 'II004', 'Bolu Goreng Tepung'),
( 'II005', 'Bika Medan'),
( 'II006', 'Cuka Tukang Baso'),
( 'II007', 'Celana Cool Pants'),
( 'II008', 'Masker Stimuli'),
( 'II009', 'Kantong Ajaib Orang Muda'),
( 'II010', 'Pedang Mainan Stemolo'),
( 'II011', 'A Week Made Pulpy Jeruk'),
( 'II012', 'Kamera Mainan Logitektek'),
( 'II013', 'Mie Instan 10 Jam Kenyang'),
( 'II014', 'Fiestiti Turkey Nugget'),
( 'II015', 'Kacamata Kuda Lumpingsi'),
( 'II016', 'Air Gunung Fujiternak'),
( 'II017', 'Mouse Gaming Kacangan'),
( 'II018', 'Keyboard MediaTV'),
( 'II019', 'Handphone Nokibaba'),
( 'II020', 'Speaker LGB Lightswork')
```

```
INSERT INTO Item VALUES
```

```
( 'PI001', 'II001', 200),
( 'PI002', 'II002', 150),
( 'PI003', 'II003', 220),
( 'PI004', 'II004', 110),
( 'PI005', 'II005', 125),
( 'PI006', 'II006', 200),
( 'PI007', 'II007', 150),
( 'PI008', 'II008', 220),
( 'PI009', 'II009', 110),
( 'PI010', 'II010', 125),
( 'PI011', 'II011', 200),
( 'PI012', 'II012', 150),
( 'PI013', 'II013', 220),
( 'PI014', 'II014', 110),
( 'PI015', 'II015', 125),
( 'PI016', 'II016', 200),
( 'PI017', 'II017', 150),
( 'PI018', 'II018', 220),
( 'PI019', 'II019', 110),
( 'PI020', 'II020', 125)
```

```
INSERT INTO TransactionHeader VALUES
```

```
( 'TI001', '2021-07-21', 'INBOUND', 'ST004'),
( 'TI002', '2021-09-16', 'OUTBOUND', 'ST005'),
( 'TI003', '2021-06-09', 'INBOUND', 'ST003'),
( 'TI004', '2021-10-25', 'OUTBOUND', 'ST002'),
( 'TI005', '2021-05-28', 'INBOUND', 'ST003'),
( 'TI006', '2021-10-06', 'OUTBOUND', 'ST001'),
( 'TI007', '2021-07-20', 'INBOUND', 'ST002'),
( 'TI008', '2021-09-14', 'OUTBOUND', 'ST004'),
( 'TI009', '2021-09-22', 'INBOUND', 'ST005'),
( 'TI010', '2021-12-11', 'OUTBOUND', 'ST001')
```

```
INSERT INTO TransactionDetail VALUES
```

```
( 'PI001', 'II001', 230, 'TI001'),
( 'PI002', 'II002', 175, 'TI001'),
```

LINK .sql dan word dari DDL, insert, dan contoh querynya :

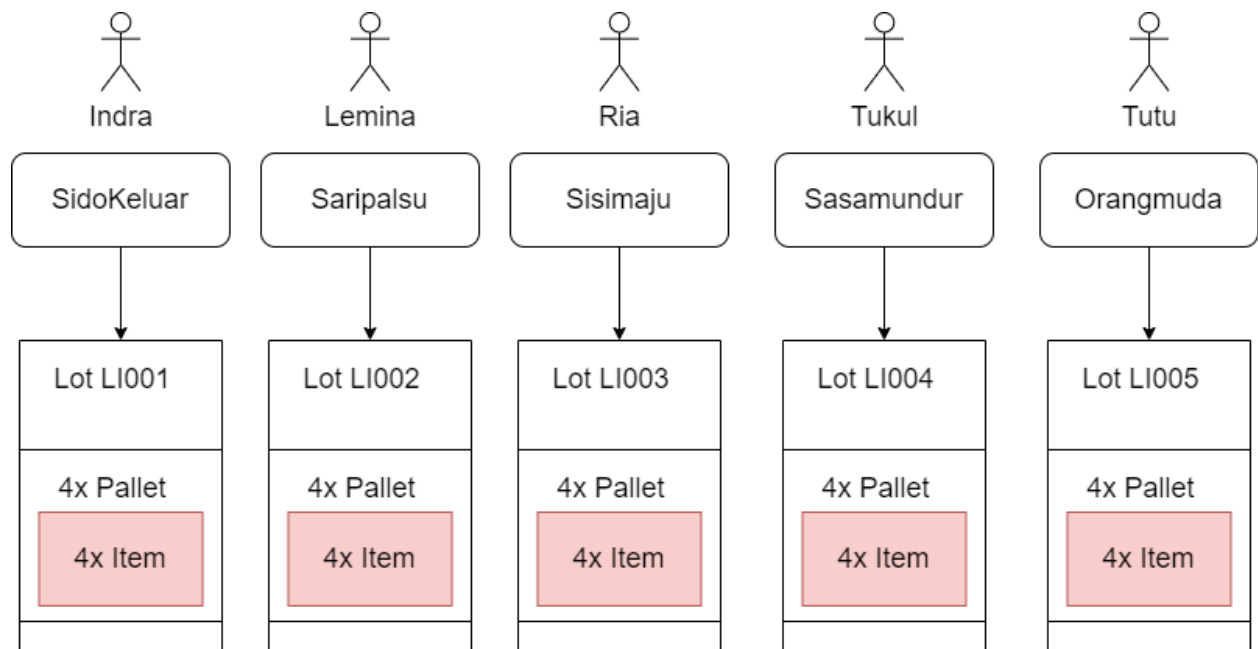
[https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

```
( 'PI003', 'II003', 270, 'TI001' ),
( 'PI004', 'II004', 260, 'TI001' ),
( 'PI001', 'II001', 30, 'TI002' ),
( 'PI002', 'II002', 25, 'TI002' ),
( 'PI003', 'II003', 50, 'TI002' ),
( 'PI004', 'II004', 150, 'TI002' ),
( 'PI005', 'II005', 1027, 'TI003' ),
( 'PI006', 'II006', 865, 'TI003' ),
( 'PI007', 'II007', 585, 'TI003' ),
( 'PI008', 'II008', 900, 'TI003' ),
( 'PI005', 'II005', 902, 'TI004' ),
( 'PI006', 'II006', 665, 'TI004' ),
( 'PI007', 'II007', 435, 'TI004' ),
( 'PI008', 'II008', 680, 'TI004' ),
( 'PI009', 'II009', 375, 'TI005' ),
( 'PI010', 'II010', 250, 'TI005' ),
( 'PI011', 'II011', 550, 'TI005' ),
( 'PI012', 'II012', 650, 'TI005' ),
( 'PI009', 'II009', 265, 'TI006' ),
( 'PI010', 'II010', 125, 'TI006' ),
( 'PI011', 'II011', 350, 'TI006' ),
( 'PI012', 'II012', 500, 'TI006' ),
( 'PI013', 'II013', 530, 'TI007' ),
( 'PI014', 'II014', 780, 'TI007' ),
( 'PI015', 'II015', 630, 'TI007' ),
( 'PI016', 'II016', 1278, 'TI007' ),
( 'PI013', 'II013', 310, 'TI008' ),
( 'PI014', 'II014', 670, 'TI008' ),
( 'PI015', 'II015', 505, 'TI008' ),
( 'PI016', 'II016', 1078, 'TI008' ),
( 'PI017', 'II017', 300, 'TI009' ),
( 'PI018', 'II018', 540, 'TI009' ),
( 'PI019', 'II019', 1024, 'TI009' ),
( 'PI020', 'II020', 789, 'TI009' ),
( 'PI017', 'II017', 150, 'TI010' ),
( 'PI018', 'II018', 320, 'TI010' ),
( 'PI019', 'II019', 914, 'TI010' ),
( 'PI020', 'II020', 664, 'TI010' )
```

Visualisasi data :

LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)



LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

## 10 Contoh Query

```
--1 Tampilkan semua info client yang dalam MMP
SELECT * FROM ClientCompany

--2 Tampilkan semua transaksi yang ada
SELECT * FROM TransactionHeader

--3 Tampilkan semua item yang ada dalam MMP
SELECT * FROM ItemInfo

--4 Tampilkan semua lot yang ada dalam MMP
SELECT * FROM LotInfo

--5 Tampilkan staff yang pernah handle Pallet PI001 beserta tanggal transaksi dan
jenis transaksi
SELECT PalletID,StaffName,TransactionType,TransactionDate
FROM Staff S JOIN TransactionHeader TH ON S.StaffID=TH.StaffID
JOIN TransactionDetail TD ON TD.TransactionID=TH.TransactionID
WHERE PalletID='PI001'

--6 Tampilkan semua item yang berada pada Lot LI001
SELECT LotID,L.PalletID,PalletType,ItemName
FROM Lot L JOIN PalletInfo PALI ON L.PalletID=PALI.PalletID
JOIN Item I ON I.PalletID=L.PalletID
JOIN ItemInfo II ON I.ItemID=II.ItemID
WHERE LotID='LI001'

--7 List semua item punya company CCI002
SELECT ItemName,ClientCompanyName,CI.ClientCompanyID
FROM CompanyInfo CI JOIN ClientCompany CC ON CI.ClientCompanyID=CC.ClientCompanyID
JOIN LotInfo LI ON CC.LotID=LI.LotID
JOIN Lot L ON L.LotID=LI.LotID
JOIN PalletInfo PALI ON L.PalletID=PALI.PalletID
JOIN Item I ON I.PalletID=L.PalletID
JOIN ItemInfo II ON I.ItemID=II.ItemID
WHERE CI.ClientCompanyID='CCI002'

--8 Tampilkan nama company, nama staff, dan tanggal transaksi dari semua transaksi
outbound sorting dari tanggal terbaru
SELECT DISTINCT ClientCompanyName, StaffName, TransactionDate
FROM CompanyInfo CI JOIN ClientCompany CC ON CI.ClientCompanyID=CC.ClientCompanyID
JOIN LotInfo LI ON CC.LotID=LI.LotID
JOIN Lot L ON L.LotID=LI.LotID
JOIN PalletInfo PALI ON L.PalletID=PALI.PalletID
JOIN Item I ON I.PalletID=PALI.PalletID
JOIN TransactionDetail TD ON I.ItemID=TD.ItemID AND I.PalletID=TD.PalletID
JOIN TransactionHeader TH ON TH.TransactionID=TD.TransactionID
JOIN Staff S ON S.StaffID=TH.StaffID
WHERE TransactionType LIKE 'OUTBOUND'
ORDER BY TransactionDate DESC

--9 Tampilkan nama item, stock, dan company pemilik dari semua item yang disimpan di
pallet reguler
SELECT DISTINCT ItemName,Stock,ClientCompanyName
```

LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

```
FROM CompanyInfo CI JOIN ClientCompany CC ON CI.ClientCompanyID=CC.ClientCompanyID
JOIN LotInfo LI ON CC.LotID=LI.LotID
JOIN Lot L ON L.LotID=LI.LotID
JOIN PalletInfo PALI ON L.PalletID=PALI.PalletID
JOIN Item I ON I.PalletID=PALI.PalletID
JOIN ItemInfo II ON II.ItemID=I.ItemID

--10 List semua id pallet yang memiliki tipe Freezer
SELECT *
FROM PalletInfo
WHERE PalletType LIKE 'Freezer'
```

LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1Odxt-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)

LINK .sql dan word dari DDL, insert, dan contoh querynya :

[https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW\\_q2FQh3?usp=sharing](https://drive.google.com/drive/folders/1OdxT-Mj9oT4AQisP7hMjKoxHW_q2FQh3?usp=sharing)