Rent N Ride

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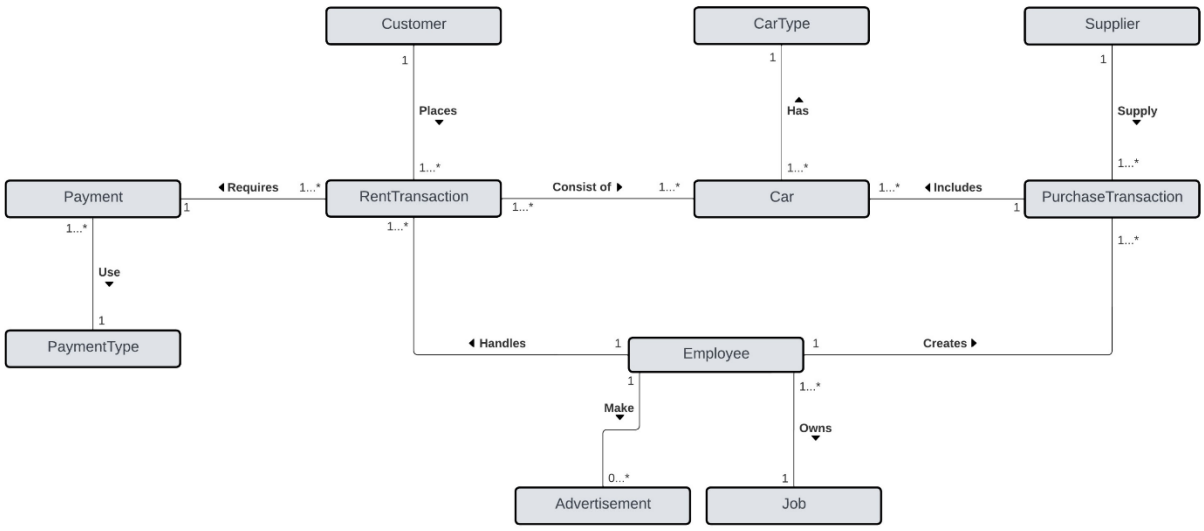
YOUR JOURNEY, OUR WHEELS.

1. Conceptual Model

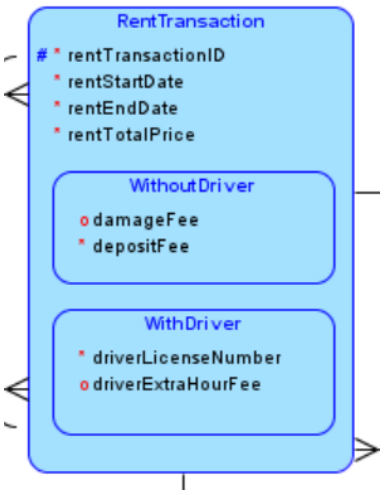
This conceptual model illustrates the core components of Rent N Ride car rental business. Customers initiate Rent Transactions, and each transaction is associated with a single Customer. Car Types categorize the vehicles, with each Car belonging to one Car Type. Employees make Purchase Transactions, create Advertisements, and handle Rent Transactions. Payment Types are used for Payments within Rent Transactions. Suppliers fulfill Purchase Transactions, and Jobs are owned by Employees. The interconnections between these entities enable the business to function seamlessly, facilitating car rentals and transactions efficiently.



2. ERD-ish

a. Each Customers must places one or more Rent_Transaction
b. Each Rent_Transaction must be placed by one and only one Customers
c. Each Car_Type must be part of one or more Car
d. Each Car must has one and only one Car_Type
e. Each Employee may make one or more Purchase_Transaction
f. Each Purchase_Transaction must be made by one and only one Employee
g. Each Employee must create one or more Advertisement
h. Each Advertisement must be created by one and only one Employee
i. Each Car must be included in one and only one Purchase_Transaction
j. Each Purchase_Transaction must consist of one or more Car
k. Each Payment_Type may be used in one or more Payment
l. Each Payment must uses one and only one Payment_Type
m. Each Car must be consisted in one or more Detail_Rent_Transaction
n. Each Detail_Rent_Transaction must consists of one and only one Payment_Type
o. Each Rent_Transaction must complete one and only one Payment
p. Each Payment must required in one and only one Rent_Transaction
q. Each Supplier may be fulfills one or more Purchase_Transaction
r. Each Purchase_Transaction must fulfilled by one and only one Supplier
s. Each Employee must owns one and only Job
t. Each Job must owned by one or more Employee
u. Each Employee may handles one or more Rent_Transaction
v. Each Rent_Transaction must be handled by one and only Employee
w. Each Car must included in one and only Purchase_Transaction
x. Each Purchase_Transaction must includes one or more Car
y. Each Rent_Transaction must be possessed by one or more Detail_Rent_Transaction
z. Each Detail_Rent_Transaction must possesses one and only one Rent_Transaction

3. Supertype and Subtype



a. Rent_Transaction (Super Type):

The Rent_Transaction" entity serves as the primary entity representing the core process of renting a vehicle in your car rental business. It contains common attributes and properties applicable to all rental transactions.

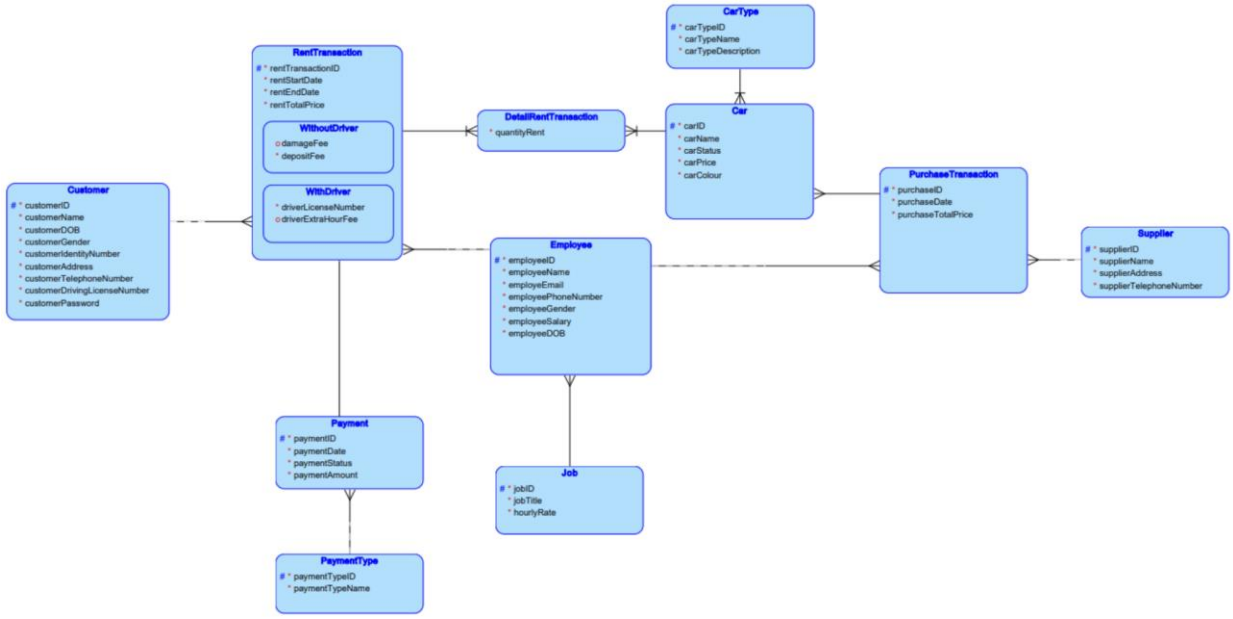
b. With_Driver (Sub Type):

With_Driver is one of the sub-types under the Rent_Transaction super type. It represents rental transactions where customers rent a vehicle and a driver is provided along with the vehicle. This sub-type may have specific attributes or relationships such as damageFee and depositFee

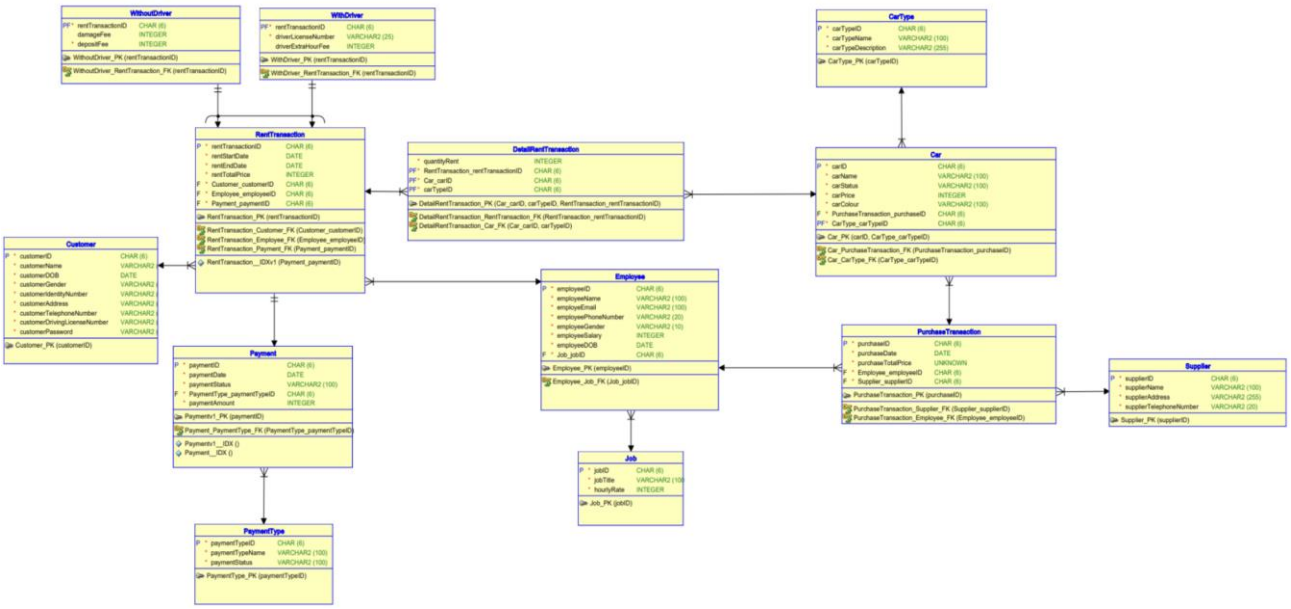
c. Without_Driver (Sub Type):

Without_Driver is another sub-type under the Rent_Transaction super type. It signifies rental transactions where customers rent a vehicle without a driver. This sub-type may have attributes or relationships, such as driverLicenseNumber, and driverExtraHourFee.

- **Logical**

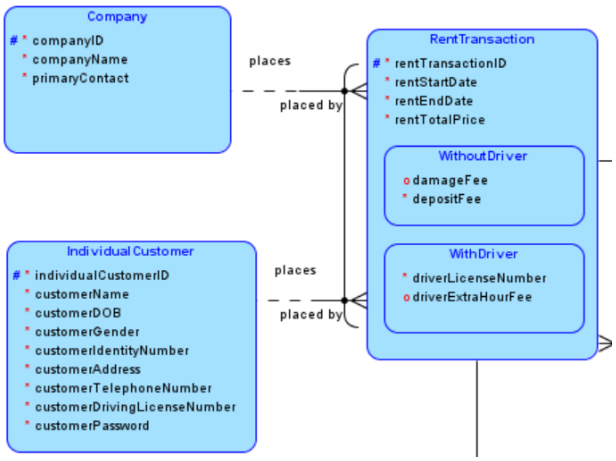


- **Relational**



4. Arc and Hierarchy

- **Arc**



Rent_Transaction

The Rent_Transaction entity is the central entity representing the act of renting a vehicle within your car rental business.

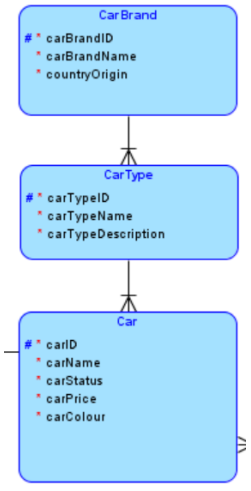
a. Company

The Company type of customer represents organizations or corporate clients that rent vehicles from your car rental business.

b. Individual Customer

The Individual_Customer type represents individual people who rent vehicles from your car rental business.

- **Hierarchy**



Car Brand

The "Car Brand" entity represents the various car manufacturers or brands available for rental in your car rental business. Each car brand may have attributes such as brand name, origin, and manufacturer details. The primary key in this entity (carBrandID) is used as an identifier.

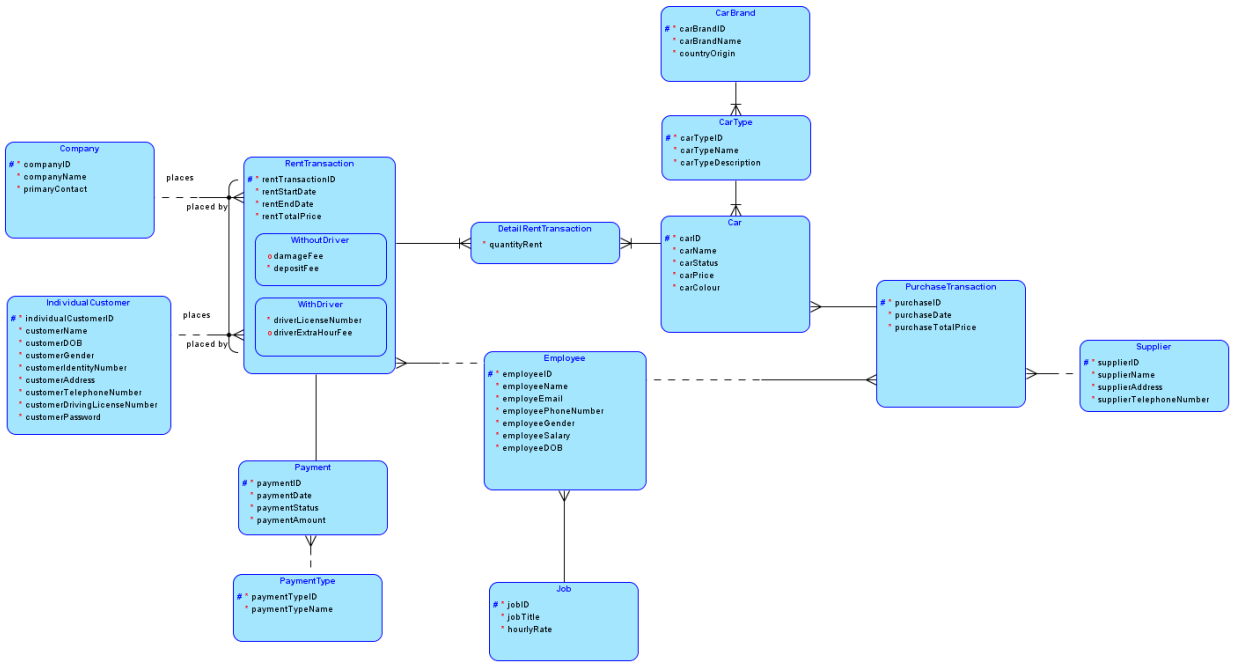
Car Type

The "Car Type" entity is a sub-category of car classification that falls under a specific car brand. Car types are defined based on the characteristics and models associated with a particular brand. The primary key in Car Brand (carBrandID) serves as a primary key and foreign key. This relationship establishes that a car type is associated with a specific car brand.

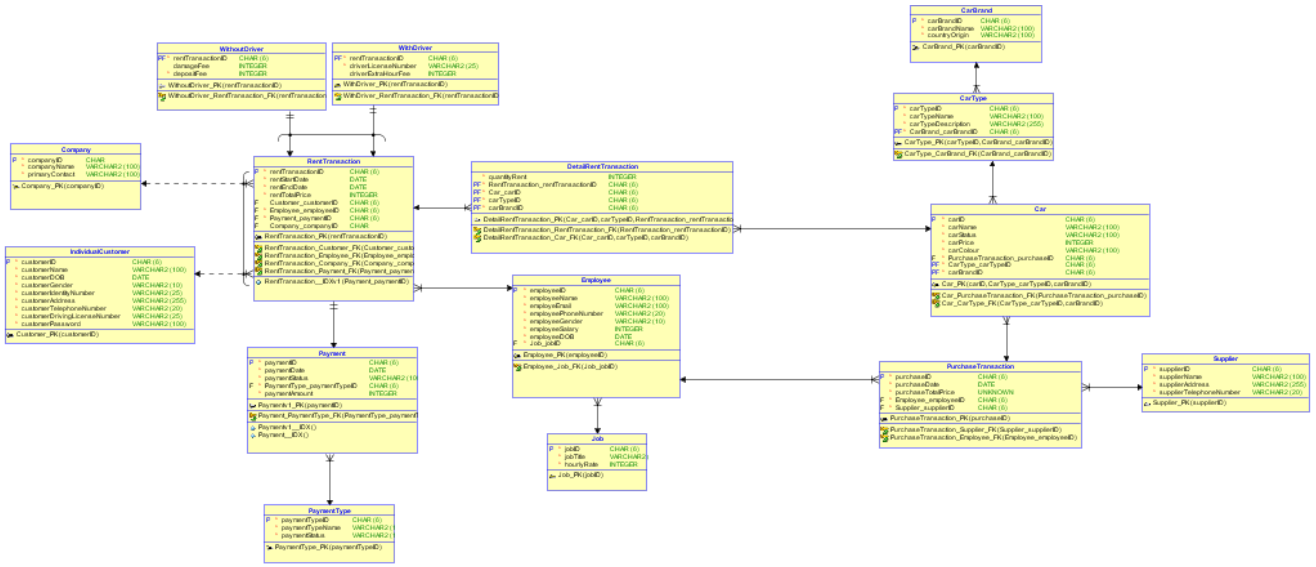
Car

The "Car" entity represents the individual vehicles available for rent. Each car is associated with a particular car type, indicating the specific model or variant being rented. The primary key in Car Type (carTypeID) and Car Brand (carBrandID) serves as a primary key and foreign key. This hierarchical connection ensures that each car is associated with a specific car type, which in turn is associated with a particular car brand.

- **Logical**



- **Relational**



5. Mapping

Customers (CTR)		
Key Type	**Optionality**	**Column name**
pk	*	customer_id
	*	customer_name
	*	customer_dob
	*	customer_gender
	*	customer_identity_number
	*	customer_address
	*	customer_telephone_number
	*	customer_driving_license_number
	*	customer_password

Jobs (JOB)		
Key Type	**Optionality**	**Column name**
pk	*	job_id
	*	job_title
	*	hourlyRate

Employees (EPE)		
Key Type	**Optionality**	**Column name**
pk	*	employee_id
	*	employee_name
	*	employee_email
	*	employee_phone_number
	*	employee_gender
	*	employee_salary
	*	employee_dob
fk	*	job_id

Purchase_Transactions (PTN)		
Key type	**Optionality**	**Column name**
pk	*	purchase_id
	*	purchase_date
	*	purchase_total_price
fk	*	employee_id
fk	*	supplier_id

Suppliers (SPR)		
Key type	**Optionality**	**Column name**
pk	*	supplier_id
	*	supplier_name
	*	supplier_address
	*	supplier_telephone_number

Cars (CAR)		
Key type	**Optionality**	**Column name**
pk	*	car_id
	*	car_name
	*	car_status
	*	car_price
	*	car_colour
pk fk	*	car_type_id
fk	*	purchase_id

Car_Types (CTE)		
Key type	**Optionality**	**Column name**
pk	*	car_type_id
	*	car_type_name
	*	car_type_description

Detail_Rent_Transactions (DRN)		
Key type	**Optionality**	**Column name**
pk fk	*	rent_transaction_id
pk fk	*	car_id
pk fk	*	car_type_id
	*	quantity_rent

Rent_Transactions(RTN)		
Key Type	**Optionality**	**Column name**
pk	*	rent_transaction_id
	*	rent_start_date
	*	rent_end_date
	*	rent_total_price
fk	*	customer_id
fk	*	employee_id
fk	*	payment_id

With_Drivers (WDR)		
Key Type	**Optionality**	**Column name**
pk fk	*	rent_transaction_id
	*	driver_license_number
	◦	driver_extra_hour_fee

Without_Driver (WOD)		
Key Type	**Optionality**	**Column name**
pk fk	*	rent_transaction_id
	*	deposit_fee
	◦	damage_fee

Payments(PMT)		
Key Type	**Optionality**	**Column name**
pk	*	payment_id
	*	payment_date
	*	payment_status
	*	payment_amount
fk	*	payment_type_id

Payment_Types (PTE)		
Key Type	**Optionality**	**Column name**
pk	*	payment_type_id
	*	payment_type_name

6. Table Instance Chart

Rent_Transactions(RTN)							
Key Type	pk				fk	fk	fk
Optionality	*	*	*	*	*	*	*
Column name	rent_transaction_id	rent_start_date	rent_end_date	rent_total_price	customer_id	employee_id	payment_id
Sample Data	RT001	27/01/2023	30/01/2023	400000	CU001	EM002	PY001
	RT002	01/04/2023	08/04/2023	450000	CU002	EM003	PY002
	RT004	31/12/2022	05/01/2023	200000	CU003	EM001	PY004

With_Driver			
Key Type	pk fk		
Optionality	*	*	o
Column name	rent_transaction_id	driver_license_number	driver_extra_hour_fee
Sample Data	RT010	1374 - 8365 - 004572	-
	RT011	1739 - 4824 - 973543	50000
	RT012	1642 - 6964 - 987095	-

Without_Driver			
Key Type	pk fk		
Optionality	*	*	o
Column name	rent_transaction_id	deposit_fee	damage_fee
Sample Data	RT013	100000	-
	RT014	100000	500000
	RT015	100000	

Payments(PMT)					
Key Type	pk				fk
Optionality	*	*	*	*	*
Column name	payment_id	payment_date	payment_status	payment_amount	payment_type_id
Sample Data	PY001	27/01/2023	Paid	400000	PT002
	PY002	01/04/2023	Paid	450000	PT001
	PY004	31/12/2022	Paid	200000	PT003

Payment_Types (PTE)		
Key Type	pk	
Optionality	*	*
Column name	payment_type_id	payment_type_name
Sample Data	PT001	Cash
	PT002	Card
	PT003	Cash

Cars (CAR)							
Key type	pk					fk	fk
Optionality	*	*	*	*	*	*	*
Column name	car_id	car_name	car_status	car_price	car_colour	car_type_id	purchase_id
Sample Data	CR001	Range Rover	Available	800000	Black	CT001	PU001
	CR002	Camry	Not Available	700000	Silver	CT002	PU002
	CR003	Alphard	Available	700000	White	CT003	PU003

Car_Types (CTE)			
Key type	pk		
Optionality	*	*	*
Column name	car_type_id	car_type_name	car_type_description
Sample Data	CT001	SUV	type of car that sits high off the ground and which often has four-wheel drive and rugged styling
	CT002	Sedan	4-door passenger car with a trunk that is separate from the passengers with a three-box body
	CT003	Minivan	built atop a platform of a small car with a low body, sliding or hinged rear doors, and 3 rows of seats that fit 8-9 passengers in total

Detail_Rent_Transactions (DRN)			
Key type	pk fk	pk fk	
Optionality	*	*	*
Column name	rent_transaction_id	car_id	quantity_rent
Sample Data	RT002	CR001	1
	RT005	CR003	2
	RT007	CR004	1

Customers (CTR)									
Key Type	pk								
Optionality	*	*	*	*	*	*	*	*	*
Column name	customer_id	customer_name	customer_dob	customer_gender	customer_identity_nun	customer_address	customer_telephone	customer_driving_l	customer_password
Sample Data	CU001	Feladiva	01/01/2003	Female	3020145687639846	Jalan Mawar No. 9, Jakarta Selatan	082198704632	1374 - 5365 - 804572	******
	CU002	Fathya	15/11/2003	Female	3987154628473529	Jalan Melati No. 10, Jakarta Barat	087771431823	1590 - 4065 - 802589	******
	CU003	Abel	28/08/2003	Female	3428104700831745	Jalan Pancasila No. 3A, Tangerang Selatan	082173984720	2170 - 0363 - 654003	******

Jobs (JOB)			
Key Type	pk		
Optionality	*	*	*
Column name	job_id	job_title	hourlyRate
Sample Data	JB001	Admin	150000
	JB002	Driver	200000
	JB003	HRD	500000

Employees (EPE)								
Key Type	pk							fk
Optionality	*	*	*	*	*	*	*	*
Column name	employee_id	employee_name	employee_email	employee_phone_	employee_gender	employee_salary	employee_dob	job_id
Sample Data	EM001	Evelyn	evelyn@gmail.com	087771431825	Female	4500000	02/11/2003	JB001
	EM002	Raihan	raihan@gmail.com	081377421629	Male	4500000	11/02/2003	JB001
	EM003	Fania	fania@gmail.com	081295290760	Female	5000000	13/03/2003	JB003

Purchase_Transactions (PTN)					
Key type	pk			fk	fk
Optionality	*	*	*	*	*
Column name	purchase_id	purchase_date	purchase_total_price	employee_id	supplier_id
Sample Data	PU001	12/01/2022	500000000	EM005	SP001
	PU002	23/04/2022	250000000	EM002	SP002
	PU003	25/06/2022	350000000	EM003	SP003

Suppliers (SPR)				
Key type	pk			
Optionality	*	*	*	*
Column name	supplier_id	supplier_name	supplier_address	supplier_telephone_number
Sample Data	SU001	mobil88 Serpong	Jalan Raya Serpong No. Km.7	085919876521
	SU002	Astrido Toyota Fatmawati	Jl. Fatmawati No.1	(021) 89776789
	SU003	Astrido Toyota Pondok Indah	Jl. Arteri Pd. Indah No. 1A	(021) 897621341