



ROS Data Generation Docket



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Project Overview

This project aims to create a robust and realistic synthetic dataset for a Restaurant Operations System (ROS). The primary purpose is to provide a comprehensive data environment suitable for various uses, including system testing, data analysis and reporting, and demonstration or training. The scope encompasses the generation of **15 interconnected data tables**, covering core aspects from client and user management to daily restaurant operations and financial transactions over a full year.



Tables

Clients

Brief Description: The Client table serves as a pivotal repository for information concerning individual clients engaged with the restaurant business, including their legal and business names, active status, and activation/inactivation dates.

SI No.	Column Name	Data Type	Formula/Source	Description
1.	client_id	Integer	Generated	Unique identifier for each client (PK)
2.	legal_name	String	Faker	Client's legal name
3.	business_name	String	Faker	Client's business name
4.	is_active	Boolean	Rule	10% of clients (3 clients) must be marked inactive; the rest should be active.
5.	activated_date	Date	Generated	Date of activation
6.	inactivated_date	Date	Rule	Only inactive clients have an invalidated date; active clients leave this empty.

Restaurants

Brief Description: This table lists all the individual restaurants managed by the clients, including their assignment to clients and countries.



SI No.	Column Name	Data Type	Formula/Source	Description
1.	id	Integer	Generated	Unique ID for each restaurant (PK)
2.	name	String	Faker	Name of the restaurant
3.	legal_name	String	Faker	Legal name of the restaurant
4.	currency_id	Integer	Rule	Foreign key
5.	client_id	Integer	Rule	Foreign key
6.	is_franchise	Boolean	Generated	Indicates if it's a franchise
7.	country_code	String	Rule	80% of restaurants should be assigned to the UK and 20% to India.

Subscriptions

Brief Description: This table defines the different subscription plans available in the ROS, including their features, costs, and user limits.



SI No.	Column Name	Data Type	Formula/Source	Description
1.	subscription_id	Integer	Manual	Unique ID for subscriptions (PK)
2.	display_name	String	Manual	Display name of the plan
3.	subscription_name	String	Manual	Plan's name
4.	product_code	String	Manual	Product code
5.	Subscription_active	Boolean	Manual	Active status of subscription
6.	subscription_code	String	Manual	Subscription code
7.	description	String	Manual	Plan description
8.	Cost	Decimal	Manual	Cost of the plan
9.	no_of_users	Integer	Manual	User limit for the plan
10.	frequency	String	Manual	Billing frequency



Users

Brief Description: This table contains information about the individual users who interact with the ROS, including their personal details, assigned roles, departments, and linked restaurant/client/subscription.

SI No.	Column Name	Data Type	Formu la/Sou rce	Description
1.	user_id	Integer	Generated	Unique user ID (PK)
2.	first_name	String	Faker	User's first name
3.	last_name	String	Faker	User's last name
4.	email	String	Faker	User's email address
5.	phone	String	Faker	User's phone number
6.	role	Integer	Rule	Each user must have exactly one role and one department assigned.
7.	department	Integer	Rule	Each user must have exactly one role and one department assigned.
8.	restaurant_id	Integer	Rule	Each user must be linked to a restaurant (and therefore to that restaurant's client).
9.	client_id	Integer	Rule	Each user must have exactly one role and one department assigned.
10.	subscription	Integer	Rule	Every user must belong to a subscription; do not exceed the subscription's user limit.



Currencies

Brief Description: A master data table defining the different currencies supported by the system.

Sl No.	Column Name	Data Type	Formula/Source	Description
1.	currency_id	Integer	Manual	Unique currency ID (PK)
2.	currency_type	String	Manual	Type of currency (e.g., GBP, INR)
3.	currency_symbol	String	Manual	Symbol (e.g., £, ₹)



Departments

Brief Description: A master data table listing the various departments within the organization or client restaurants.

SI No.	Column Name	Data Type	Formula/S ource	Description
1.	dep_id	Integer	Manual	Unique department ID (PK)
2.	department_name	String	Manual	Name of the department
3.	department_code	String	Manual	Department code

Roles

Brief Description: A master data table defining the different roles within the system, often associated with specific permissions and responsibilities.

SI No.	Column Name	Data Type	Formul a/ source	Description
1.	role_id	Integer	Manual	Unique role ID (PK)
2.	name	String	Manual	Name of the role
3.	guard_name	String	Manual	Guard name for permissions
4.	created_at	Datetime	Manual	Timestamp of creation
5.	updated_at	Datetime	Manual	Timestamp of last update



Countries

Brief Description: A master data table providing details about countries, used for regional specific data like tax rates.

SI No.	Column Name	Data Type	Formula/ Source	Description
1.	country_name	String	Manual	Full country name (PK)
2.	country_code	String	Manual	3-letter country code
3.	country_alpha2_code	String	Manual	2-letter country code
4.	lang_code	String	Manual	Language code
5.	lang_name	String	Manual	Language name

Cash_up

Brief Description: This table records the daily financial reconciliation summaries for each restaurant, tracking cash flow and discrepancies.



SI No.	Column Name	Data Type	Formula/Source	Description
1.	cash_up_id	Integer	Generated	Unique ID for cash-up records (PK)
2.	restaurant_id	Integer	FK	ID of the restaurant
3.	bod_amount	Decimal	Python Script (Inter-day Financial Logic)	Beginning of day amount
4.	sales_achieved	Decimal	Python Script (Aggregated from Orders)	Total sales for the day
5.	expenses_incurred	Decimal	Python Script (Aggregated from Expenses)	Total expenses for the day
6.	tax_amount	Decimal	Rule	tax charge and delivery charges should come from the Sales table.
7.	delivery_charges	Decimal	Rule	Total delivery charges (from Sales)
8.	eod_amount	Decimal	Python Script (Inter-day Financial Logic)	End of day amount
9.	match	Boolean	Python Script (Comparison Logic)	Does EOD match calculations?
10.	banking_id	Integer	FK	ID of the banking record
11.	cash_up_date	Date	Generated	Date of the cash-up
12.	Cashup_status	String	Rule	FOD=BOD+ sales – expenses -delivery charge



Sales

Brief Description: This table contains daily aggregated sales data for each restaurant, computed from individual orders.

SI No.	Column Name	Data Type	Formula/S ource	Description
1.	sales_id	Integer	Generated	Unique sales transaction ID (PK)
2.	restaurant_id	Integer	FK	ID of the restaurant
3.	credited_tip	Decimal	Generated	Tip amount from credit cards
4.	drinks_payment	Decimal	Python Script (Aggregated from Orders)	Daily total payment for drinks
5.	food_payment	Decimal	Python Script (Aggregated from Orders)	Daily total payment for food
6.	other_payment	Decimal	Python Script (Aggregated from Orders)	Daily total other payment
7.	service_charge	Decimal	Python Script (Aggregated from Orders)	Daily total service charges

8.	delivery_charge	Decimal	Python Script (Aggregated from Orders)	Daily total delivery charges
9.	sales_Date	Date	Generated	Date of the sales record

TaxInfo

Brief Description: A master data table defining different tax types and their



applicable percentages based on country.

SI No.	Column Name	Data Type	Formula/Source	Description
1.	tax_type_id	Integer	Manual	Unique tax type ID (PK)
2.	country_name	String	FK	Country where tax applies
3.	tax_type	String	Manual	Type of tax (e.g., VAT, GST)
4.	tax_percentage	Decimal	Manual	Tax rate

Orders

Brief Description: This table captures details of every individual customer order, including amounts, types, and associated charges.



SI No.	Column Name	Data Type	Formula/Source	Description
1.	order_id	Integer	Generated	Unique order ID (PK)
2.	restaurant_id	Integer	FK	ID of the restaurant
3.	order_date	Date	Generated	Date of the order
4.	order_time	Time	Generated	Time of the order
5.	order_type	Varchar	Rule	Each order type should be either Dine-in or Home Delivery
6.	drinks_amount	Decimal	Generated	Amount for drinks
7.	food_amount	Decimal	Generated	Amount for food
8.	other_payment	Decimal	Generated	Other payment amounts
9.	service_charges	Decimal	Excel Formula: IF(order_type="Dine in", 0.05 * (drinks_amount + food_amount+ other_payment), 0)	Service charges applied
10.	delivery_charges	Decimal	Excel Formula: IF(order_type="Home Delivery", 0.10 * (drinks_amount + food_amount + other_payment), 0)	Delivery charges applied
11.	order_amount	Decimal	Excel Formula: drinks_amount + food_amount + other_payment + service_charges + delivery_charges	Sub-total of the order
12.	tax_amount	Decimal	Excel Formula: IF(country_code ="UK", 0.08 *order_amount, IF(country_code ="India", 0.18 * order_amount, 0))	Tax amount
13.	order_total	Decimal	Excel Formula: order_amount + tax_amount	Final total of the order
14.	country_code	String	Rule	For UK restaurants, tax amount = 8% of order amount. For India, tax amount = 18% of order amount.



Deliveries

Brief Description: This table records specific details for orders designated as "Home Delivery," including partner payouts and API reconciliation amounts.

SI No.	Column Name	Data Type	Formula/Source	Description
1.	id	Integer	FK/Generated	Unique delivery ID (PK, linked to order_id)
2.	restaurant_id	Integer	FK	ID of the restaurant
3.	delivery_amount	Decimal	Python Script (Derived from Orders)	Partner payout amount
4.	order_amount	Decimal	Python Script (Derived from Orders)	Order amount for delivery calculation
5.	api_amount	Decimal	Python Script (Derived from Orders)	API reported amount
6.	match	Boolean	Generated	Indicates if amounts match
7.	name	String	Generated	Name of the delivery service
8.	delivery_date	Date	Generated	Date of delivery



Expenses

Brief Description: This table tracks various expenditures incurred by each restaurant on a daily basis.

SI No.	Column Name	Data Type	Formula/Source	Description
1.	expense_id	Integer	Generated	Unique expense ID (PK)
2.	restaurant_id	Integer	FK	ID of the restaurant
3.	bills	Decimal	Generated	Bill amounts
4.	vendors	Decimal	Generated	Vendor payments
5.	wage_advances	Decimal	Generated	Wage advances paid
6.	repairs	Decimal	Generated	Repair costs
7.	sundries	Decimal	Generated	Miscellaneous expenses
8.	Expense_date	Date	Generated	Date of the expense
9.	Total_expenses	Decimal	Generated	Sum of all expenses listed below

Banking_Info

Brief Description: This table records daily banking activities and reconciliation status



for each restaurant.

SI No.	Column Name	Data Type	Formula/Source	Description
1.	banking_id	Integer	PK	Unique banking record ID
2.	restaurant_id	Integer	FK	ID of the restaurant
3.	banked_total	Decimal	Python Script (Derived from EOD)	Total amount banked
4.	banking_total	Decimal	Python Script (Derived from Cash_up EOD)	Total amount from cash-up
5.	reconcile_status	Varchar	Manual	Status of reconciliation
6.	banking_date	Date	Generated	Date of banking deposit
7.	banking_time_indicator	Varchar	Generated	AM/PM banking
8.	sealed_by	Varchar	Faker	Name of employee who sealed