

1. Why was a python script used?

I chose to use a python script to generate thousands of recipes, ingredients, and user information from a public API available instead of manually writing out everything or making things up. The script also saved time instead of manually inserting the data, it generates a SQL file with all the insert statements.

The python script gave me control over:

- Primary key uniqueness
- Data volume requirements
- Randomization
- All constraints

2. How the script works?

The script pulls real data from OpenFoodFacts API and generates artificial fake users and recipes based off our schema.

Core features:

- Duplication filtering

The API contains foods that are the same just different accents on letters from different countries, so the script has a normalization function that removes accents and all other extra things that can make it seem like they're different words. This guaranteed no duplications.

- Joinability

I generated different "userId" values from (1-3000) then used those IDs when creating mealplans, to give each plan to a user.

3. Size Requirements

- Ingredients – 2000 rows
- Recipe – 3000 rows
- Site_user – 300 rows
- All others are in the range of 10-50 rows

4. Samples

- Ingredients

	ingredientName	category	measurementUnit	unitShorthand	calories	protein	carbs
▶	0% fat Greek yoghurt	Produits laitiers	100 grams	g	50	8	4
	03.06.2024 DEU 10 1H 07:14 4	Produits laitiers	100 grams	g	232	11	6
	10 Fish Fingers Omega 3	Seafood	100 grams	g	208	12	19
	10 Pains au lait frais sans sucres ajoutés 350g	Snacks	100 grams	g	324	10	47
	10 potato waffles	Meals	100 grams	g	168	2	22
	10 Tortillas Trigo	Alimentos e bebidas à base de plantas	100 grams	g	294	8	50
	100% cacao puro natural	Cocoa and its products	100 grams	g	339	25	17
	100% mie	Aliments et boissons à base de végétaux	100 grams	g	266	7	48
	100% mie complet 500g	Aliments et boissons à base de végétaux	100 grams	g	250	8	42
	10dh	Produits de la mer	100 grams	g	180	30	1
	12 Crunchy Taco Shells	Plant-based foods and beverages	100 grams	g	509	5	59
	14 Maxi Tranches complet sans sucres ajoutés	Aliments et boissons à base de végétaux	100 grams	g	243	9	42
	180G C OR NOIR NOISETTE	Snacks	100 grams	g	569	7	43
	180G LT NOISETTE COTE D OR	Snacks	100 grams	g	555	9	45
	1848 Chocolat en poudre	Beverages and beverages preparations	100 grams	g	515	7	63

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INSERT INTO ingredients (ingredientName, category, measurementUnit, unitShorthand, calories, protein, carbs, fats) VALUES ('Coca-Cola', 'Bevande e preparati per bevande', '100 grams', 'g', 42, 0, 11, 0);
INSERT INTO ingredients (ingredientName, category, measurementUnit, unitShorthand, calories, protein, carbs, fats) VALUES ('Creamy', 'Produits laitiers', '100 grams', 'g', 109, 4, 17, 3);
INSERT INTO ingredients (ingredientName, category, measurementUnit, unitShorthand, calories, protein, carbs, fats) VALUES ('Maruja', 'Snacks', '100 grams', 'g', 539, 7, 53, 33);
INSERT INTO ingredients (ingredientName, category, measurementUnit, unitShorthand, calories, protein, carbs, fats) VALUES ('Cream cheese', 'Dairies', '100 grams', 'g', 257, 10, 3, 18);
INSERT INTO ingredients (ingredientName, category, measurementUnit, unitShorthand, calories, protein, carbs, fats) VALUES ('Spreadable Slightly Salted', 'Dairies', '100 grams', 'g', 706, 0, 1, 78);
INSERT INTO ingredients (ingredientName, category, measurementUnit, unitShorthand, calories, protein, carbs, fats) VALUES ('Organic 70% Dark Chocolate Bar', 'Snacks', '100 grams', 'g', 580, 9, 36, 42);
INSERT INTO ingredients (ingredientName, category, measurementUnit, unitShorthand, calories, protein, carbs, fats) VALUES ('jibal', 'Chees', '100 grams', 'g', 138, 2, 6, 12);

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- Recipe

	recipeId	name	recipecol	cookTimeMin	recipecol1
▶	1	Sidi Ali	Prepared meal based on Sidi Ali.	57	api_meal
	2	perly	Prepared meal based on perly.	49	api_meal
	3	Lait	Prepared meal based on Lait.	25	api_meal
	4	Fromage blanc nature	Prepared meal based on Fromage blanc nature.	21	api_meal
	5	uht jaouda 1L	Prepared meal based on uht jaouda 1L.	12	api_meal
	6	Jben	Prepared meal based on Jben.	7	api_meal
	7	Marmite Yeast Extract	Prepared meal based on Marmite Yeast Extract.	55	api_meal
	8	Jaouda	Prepared meal based on Jaouda.	30	api_meal
	9	Lait Frais	Prepared meal based on Lait Frais.	20	api_meal
	10	lilia	Prepared meal based on lilia.	21	api_meal
	11	Prince Goût Chocolat	Prepared meal based on Prince Goût Chocolat.	46	api_meal
	12	Excellence Noir Prodi...	Prepared meal based on Excellence Noir Prodig...	53	api_meal
	13	Nutella	Prepared meal based on Nutella.	31	api_meal
	14	Orange juice	Prepared meal based on Orange juice.	28	api_meal
	15	Tonik	Prepared meal based on Tonik.	38	api_meal
	16	levure pâtisserie	Prepared meal based on levure pâtisserie.	38	api_meal

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INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (2, 'perly', 'Prepared meal based on perly.', 49, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (3, 'Lait', 'Prepared meal based on Lait.', 25, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (4, 'Fromage blanc nature', 'Prepared meal based on Fromage blanc nature.', 21, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (5, 'uht jaouda 1L', 'Prepared meal based on uht jaouda 1L.', 12, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (6, 'Jben', 'Prepared meal based on Jben.', 7, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (7, 'Marmite Yeast Extract', 'Prepared meal based on Marmite Yeast Extract.', 55, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (8, 'Jaouda', 'Prepared meal based on Jaouda.', 30, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (9, 'Lait Frais', 'Prepared meal based on Lait Frais.', 20, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (10, 'lilia', 'Prepared meal based on lilia.', 21, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (11, 'Prince Goût Chocolat', 'Prepared meal based on Prince Goût Chocolat.', 46, 'api_meal');
INSERT INTO recipe (recipeId, name, recipecol, cookTimeMin, recipecol1) VALUES (12, 'Excellence Noir Prodigious 90% Cacao', 'Prepared meal based on Excellence Noir Prodigious 90% Cacao.', 53, 'api_meal');

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- Users

Result Grid										
		Filter Rows:		Edit:		Export/Import:		Wrap Cell Content:		
	userId	firstName	lastName	email	startDate	endDate	dailyCalories	dailyProtein	dailyCarbs	dailyFat
▶	1	Emma	Kim	user1@mealapp.com	2025-04-25 00:00:00	NULL	1811	62	369	77
	2	Aisha	Ali	user2@mealapp.com	2025-04-27 00:00:00	NULL	3480	103	262	80
	3	Noah	Wang	user3@mealapp.com	2025-03-09 00:00:00	NULL	3252	108	173	95
	4	Chen	Hammad	user4@mealapp.com	2025-04-24 00:00:00	NULL	2437	140	140	117
	5	Olivia	Garcia	user5@mealapp.com	2025-04-24 00:00:00	NULL	2942	140	289	69
	6	Ali	Patel	user6@mealapp.com	2025-03-22 00:00:00	NULL	1826	124	393	93
	7	James	Hammad	user7@mealapp.com	2025-03-24 00:00:00	NULL	2067	104	332	52
	8	Hassan	Lopez	user8@mealapp.com	2025-03-05 00:00:00	NULL	2016	102	366	102
	9	Sara	Santos	user9@mealapp.com	2025-04-21 00:00:00	NULL	3459	112	227	42
	10	Youssef	Chen	user10@mealapp.com	2025-03-09 00:00:00	NULL	1731	169	280	115
	11	James	Ivanov	user11@mealapp.com	2025-01-10 00:00:00	NULL	3060	75	182	98
	12	Raj	Patel	user12@mealapp.com	2025-04-13 00:00:00	NULL	2040	96	202	115
	13	Amir	Smith	user13@mealapp.com	2025-01-20 00:00:00	NULL	2164	80	217	45
	14	Youssef	Ali	user14@mealapp.com	2025-03-22 00:00:00	NULL	2924	183	144	86
	15	Emma	Wang	user15@mealapp.com	2025-02-20 00:00:00	NULL	2782	194	259	80

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INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (1, 'Emma', 'Kim', 'user1@mealapp.com', '2025-04-25', NULL, 1811, 62, 369, 77);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (2, 'Aisha', 'Ali', 'user2@mealapp.com', '2025-04-27', NULL, 3480, 103, 262, 80);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (3, 'Noah', 'Wang', 'user3@mealapp.com', '2025-03-09', NULL, 3252, 108, 173, 95);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (4, 'Chen', 'Hammad', 'user4@mealapp.com', '2025-04-24', NULL, 2437, 140, 140, 117);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (5, 'Olivia', 'Garcia', 'user5@mealapp.com', '2025-04-24', NULL, 2942, 140, 289, 69);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (6, 'Ali', 'Patel', 'user6@mealapp.com', '2025-03-22', NULL, 1826, 124, 393, 93);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (7, 'James', 'Hammad', 'user7@mealapp.com', '2025-03-24', NULL, 2067, 104, 332, 52);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (8, 'Hassan', 'Lopez', 'user8@mealapp.com', '2025-03-05', NULL, 2016, 102, 366, 102);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (9, 'Sara', 'Santos', 'user9@mealapp.com', '2025-04-21', NULL, 3459, 112, 227, 42);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (10, 'Youssef', 'Chen', 'user10@mealapp.com', '2025-03-09', NULL, 1731, 169, 280, 115);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (11, 'James', 'Ivanov', 'user11@mealapp.com', '2025-01-10', NULL, 3060, 75, 182, 98);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (12, 'Raj', 'Patel', 'user12@mealapp.com', '2025-04-13', NULL, 2040, 96, 202, 115);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (13, 'Amir', 'Smith', 'user13@mealapp.com', '2025-01-20', NULL, 2164, 80, 217, 45);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (14, 'Youssef', 'Ali', 'user14@mealapp.com', '2025-03-22', NULL, 2924, 183, 144, 86);
INSERT INTO site_user (userId, firstName, lastName, email, startDate, endDate, dailyCalories, dailyProtein, dailyCarbs, dailyFat) VALUES (15, 'Emma', 'Wang', 'user15@mealapp.com', '2025-02-20', NULL, 2782, 194, 259, 80);

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