

TP No. 1 — Part 2: Creating and manipulating a “Pizzerias” database

Advanced Databases (RSD/AI)

General objective

Implement, step by step, the creation of a relational database with PostgreSQL, using declarative SQL only (no programming). The goal is to design, secure and query a small database named “pizzerias”, representing people, their habits and the pizzerias they frequent.

Business rules

1. A person can frequent several pizzerias (and vice versa).
2. A person can eat several types of pizza (and vice versa).
3. A pizzeria can serve several pizzas (and each pizza can be served by several pizzerias). The price depends on the (pizzeria, pizza) pair.

(Conceptual) schema of the database

Relation	Attributes	Primary key
Person	(name, age, gender)	name
Frequents	(name, pizzeria)	(name, pizzeria); name ref. → Person(name)
Eats	(name, pizza)	(name, pizza); name ref. → Person(name)
Serves	(pizzeria, pizza, price)	(pizzeria, pizza)

Instance of the “Pizzerias” database — Sample data

			name pizzeria		name pizza	
name	age	gender				
Lamis	16	F	Lamis	Pizza Hut	Lamis	tuna
Louey	21	M	Louey	Pizza Hut	Louey	mushroom
Wael	33	M	Louey	Magic Pizza	Louey	tuna
Danny	13	M	Wael	Galaxy Pizza	Louey	cheese
Dida	45	F	Wael	Gargat Pizza	Wael	supreme
Wassila	21	F	Danny	Galaxy Pizza	Danny	tuna
Laidi	24	M	Danny	Gargat Pizza	Danny	cheese
Amy	30	F	Dida	Galaxy Pizza	Danny	chicken
Ouail	18	M	Dida	Magic Pizza	Danny	supreme
Person			Wassila	Dominos	Danny	mushroom
			Wassila	Family Pizza	Dida	supreme
			Laidi	Magic Pizza	Dida	cheese
			Laidi	Pizza Hut	Wassila	mushroom
			Amy	Dominos	Laidi	mushroom
			Amy	Galaxy Pizza	Laidi	supreme
			Amy	Pizza Hut	Laidi	cheese
			Ouail	Gargat Pizza	Amy	supreme
			Ouail	Galaxy Pizza	Amy	cheese
			Ouail	Dominos	Ouail	supreme
					Ouail	tuna
			Frequents		Eats	

pizzeria	pizza	price (DZD)
Pizza Hut	tuna	1200.0
Pizza Hut	chicken	1200.0
Pizza Hut	cheese	900.0
Pizza Hut	supreme	1200.0
Family Pizza	tuna	975.0
Family Pizza	chicken	950.0
Family Pizza	cheese	700.0
Family Pizza	mushroom	925.0
Dominos	cheese	975.0
Dominos	mushroom	1100.0
Galaxy Pizza	tuna	800.0
Galaxy Pizza	cheese	925.0
Galaxy Pizza	chicken	975.0
Gargat Pizza	tuna	800.0
Gargat Pizza	cheese	700.0
Gargat Pizza	supreme	850.0
Magic Pizza	cheese	775.0
Magic Pizza	supreme	850.0

Serves

Questions

Questions

1. Find all pizzerias frequented by at least one person under the age of 18. (Return: pizzeria)
2. Give the names of all women who eat mushroom or tuna (or both). (Return: name)
3. Give the names of all women who eat both mushroom and tuna. (Return: name)
4. Find all pizzerias that serve at least one pizza that Amy eats for less than 1000.00 DZD. (Return: pizzeria)
5. Find all pizzerias frequented only by women or only by men. (Return: pizzeria)
6. For each person, list the pizzas they eat that are not served by any pizzeria they frequent. (Return: (name, pizza))
7. Give the names of the people who frequent only pizzerias serving at least one pizza they eat. (Return: name)
8. Give the names of the people who frequent every pizzeria serving at least one pizza they eat. (Return: name)
9. Find the pizzeria that serves the cheapest “tuna” pizza. In case of a tie, display all the pizzerias concerned. (Return: pizzeria)