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Workshop # 2

1. Based on the table Apartments show as follows:

a) π Number (σ Area > 50 (Apartment))

Number
102
103
306
308
409
310

b) π Number, Owner (σ Rooms > 2 $\wedge$ Rooms < 4 (Apartment))

Number	Owner
102	Neil Peart
103	Alex Van Halen
306	Sammy Hagar
409	Wolfgang Van Halen
310	Valerie Bertinelli

c) π Number, Owner, Area (σ Area > 40 $\wedge$ Area < 70 (Apartment))

Number	Owner	Area
101	Chad Smith	45
102	Neil Peart	60
305	David Lee Roth	80
308	Gary Cherone	85
409	Wolfgang Van Halen	65

d) PVanHalenApartments (σ Owner LIKE 'Van Halen' (Apartment))

Apartment ID	Number	Block	Owner	Area	Rooms
3	103	1	Alex Van Halen	45	3
4	304	2	Eddie Van Halen	30	1
9	409	1	Wolfgang Van Halen	65	3

e) π Number [σ > 60 (Apartment)] × (Public Services)

σ > 60 (Apartment)

Number	Area
103	75
306	70
409	65
510	80

= A

Service ID	Name
1	Water
2	Electricity
3	Gas

= B

4 × 3 = 12

=> π Number (A × B) π Eliminate duplicates

Number
103
306
409
510

2. Based on the table Owner show as follows

a) π Name (σ Age > 50 (Owner))

Name
Alex Van Halen
Eddie Van Halen
David Lee Roth
Sammy Hagar
Michael Anthony
Valerie Bertinelli

b) π Name, Age (σ Children ≥ 1 ∧ Children < 3 (Owner))

Name	Age
Chad Smith	50
Eddie Van Halen	58
Sammy Hagar	65
Valerie Bertinelli	65

c) π Name, Age, Children (σ Age > 40 ∧ Age < 60 (Owner))

Name	Age	Children
Chad Smith	50	2
Neil Peart	45	1
Eddie Van Halen	58	2
David Lee Roth	55	1

d) ρ ROwners (σ Name Like '%r%' (Owner))

Owner ID	Name	Age	Children	Pets
2	Neil Pearl	45	1	0
6	Sammy Hagar	65	2	1
8	Gary Cherone	40	1	0

e) π Name (σ Pets $\geq 1 \wedge$ Children < 2 (Owner))

Name

Ningun Cumple Pets $\geq 1 \wedge$ Children < 2

Si fuera mayor o igual, tendriamos:

π Name(σ Pets $\geq 1 \wedge$ Children ≤ 2 (Owner))

Name
Chad Smith
Eddie Van Halen
Sammy Hagar
Valerie Bertinelli

Note

3. Based on the table. Reservations show as follows:

a) ρ New Year Reservations (π ApartmentNumber, Owner, CommonSpace (σ Date = '2024-01-01' (Reservations))

ApartmentNumber	Owner	CommonSpace
101	Chad Smith	Soccer Field

b) π Owner [σ (Date > '2024-01-02') $\wedge$ (CommonSpace = 'Pool' $\vee$ ApartmentNumber = 104 $\vee$ 102) (Reservations)]

Owner
Alex Van Halen
Chad Smith
Neil Pearl

c) π ReservationsID, CommonSpace (Reservations)

ReservationsID	CommonSpace
1	Soccer Field
2	Pool
3	Gym
4	Pool
5	Soccer Field
6	Gym

ReservationsID	CommonSpace
⋮	⋮
7	Pool
8	Gym
9	Soccer Field
10	Pool

4. Based on the tables showed above, create an ER Diagram to show the relationships between the tables. If you think you need and additional entity you could add it.