

Workshop 2 - Databases foundations

1) Based on the table Apartment shows as follow

| Apartment ID | Number | Owner | Area | Rooms | Block |
|--------------|--------|--------------------|------|-------|-------|
| 1 | 101 | Chad Smith | 45 | 2 | 1 |
| 2 | 102 | Nell Pearl | 60 | 3 | 3 |
| 3 | 103 | Alex Van Halem | 75 | 3 | 1 |
| 4 | 304 | Eddi Van Halem | 30 | 1 | 2 |
| 5 | 305 | David Lee Roth | 50 | 2 | 3 |
| 6 | 306 | Sammy Hagar | 70 | 3 | 1 |
| 7 | 207 | Michael Anthony | 40 | 2 | 2 |
| 8 | 308 | Gary Cherone | 55 | 2 | 3 |
| 9 | 409 | Wolfgang Van Halem | 65 | 3 | 1 |
| 10 | 310 | Valeri Bertinelli | 80 | 3 | 2 |

A) Show the number of the apartment with more than 50 Area.

SQL: $\text{Number (6 Area > 50 (Apartment))}$

| RTA: Number |
|-------------|
| 102 |
| 103 |
| 306 |
| 308 |
| 409 |
| 310 |

B) Show the Number and Owner of the apartments with more than 2 Rooms and less than 4 Rooms

π Number, Owner ($2 < \text{Rooms} < 4$ (Apartment))

RTA:

| Number | Owner |
|--------|--------------------|
| 102 | Neil Pearl |
| 103 | Alex Von Holen |
| 306 | Sammy Hagar |
| 409 | Wolfgang Von Holen |
| 310 | Valerie Bertinelli |

C) Show the Number, Owner and Area of the apartments with more than 40 Area and less than 70 Area.

π Number, Owner, Area ($40 < \text{Area} < 70$ (Apartment))

RTA:

| Number | Owner | Area |
|--------|--------------------|------|
| 101 | Chad Smith | 45 |
| 102 | Neil Pearl | 60 |
| 309 | David Lee Roth | 50 |
| 308 | Gary Cherone | 55 |
| 409 | Wolfgang Von Holen | 65 |

D) Show all rows of the table Apartment where Owner contains the word Von Holen, and called VonHolenAportments

Create table VonHolenAportment As Select *
From Apartment

Owner like "Von Holen" (Apartment)

RTA: VonHolenAportments table

| ApartmentID | Number | Block | Owner | Area | Rooms |
|-------------|--------|-------|--------------------|------|-------|
| 3 | 103 | 1 | Alex Von Holen | 75 | 3 |
| 4 | 304 | 2 | Eddie Von Holen | 30 | 1 |
| 9 | 409 | 1 | Wolfgang Von Holen | 65 | 3 |

E) Using next table called PublicService, show the Number of the apartments where more than 60 Area with all the PublicServices available.

Number (σ Area > 60 (Apartment) × (PublicService))

2) Based on the table Owner shows as follows

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| Owner ID | Name | Age | Children | Pets |
|----------|--------------------|-----|----------|------|
| 1 | Chad Smith | 50 | 2 | 1 |
| 2 | Neil Peor | 45 | 1 | 0 |
| 3 | Alex Von Hohen | 60 | 3 | 2 |
| 4 | Eddie Von Hohen | 58 | 2 | 1 |
| 5 | David Lee Roth | 55 | 1 | 0 |
| 6 | Sammy Hager | 65 | 2 | 1 |
| 7 | Michael Anthony | 70 | 3 | 2 |
| 8 | Gery Cherone | 40 | 1 | 0 |
| 9 | Wolfgang Von Hohen | 30 | 0 | 0 |
| 10 | Valerie Bertinelli | 65 | 2 | 1 |

A) Show the Name of the Owner with more than 50 Age.

$\pi(\text{Name} | \text{Age} > 50 (\text{Owner}))$

RTA:

| |
|--------------------|
| Name |
| Alex Von Hohen |
| Eddie Von Hales |
| David Lee Roth |
| Sammy Hager |
| Michael Anthony |
| Valerie Bertinelli |

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B) Show the Name and age of the owners with more than 1 children and less than 3 children.

$\pi \text{ Name, Age } (5 \text{ children} > 1 \wedge \text{children} < 3)$

RTA:

| Name | Age |
|--------------------|-----|
| Chad Smith | 50 |
| Eddie Von Hohen | 58 |
| Valerio Bertinelli | 65 |
| Sammy Hagar | 65 |

C) Show the Name, Age and Children of the Owner with more than 40 age and less than 60 age.

$\pi \text{ Name, Age, Children } (5 \text{ Age} > 40 \wedge \text{Age} < 60)$

RTA:

| Name | Age | Children |
|--------------------|-----|----------|
| Chad Smith | 50 | 2 |
| Eddie Von Hohen | 58 | 2 |
| David Lee Roth | 55 | 1 |
| Gary Cherone | 40 | 1 |
| Wolfgang Von Hohen | 30 | 0 |

D) Show all rows of the table Owner where there is a or or or substring in the Name and called R Owners

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Create table R Owner as Select *

From Owner

⊆ Name like %or% (Owner) ∪ ⊆ Name like %Ar% (Owner)

RTA: R owner table

Owner

| Owner ID | Name | Age | Children | Pets |
|----------|-------------|-----|----------|------|
| 2 | Neil Pearl | 45 | 1 | 0 |
| 6 | Sammy Hogor | 65 | 2 | 1 |

⊆ Show the Name of the owners who have more than 1 Pets and less than 2 children

⊆ Name (⊆ Pets > 1 ∧ Children < 2 (Owner))

Nobody