

D M A

Workshop 2

1. Queries on the apartment table.

a) $\pi_{\text{number}} (\sigma_{\text{Area} > 50} (\text{Apartment}))$

| Number |
|--------|
| 102 |
| 103 |
| 305 |
| 409 |
| 310 |

b) $\pi_{\text{number}, \text{owner}} (\sigma_{2 < \text{rooms} < 4} (\text{Apartment}))$

| Number | Owner |
|--------|--------------------|
| 402 | Neil pearl |
| 103 | Alex Vantida |
| 305 | David Lee Roth |
| 306 | Sammy Hagar |
| 409 | Wolfgang van halen |

c) $\pi_{\text{number}, \text{owner}, \text{Area}} (\sigma_{40 < \text{Area} < 70} (\text{Apartment}))$

| Number | Owner | Area |
|--------|--------------------|------|
| 102 | Neil pearl | 60 |
| 207 | Michael Anthony | 40 |
| 308 | Gary Cherone | 55 |
| 409 | Wolfgang van halen | 65 |

d) P Van Halen Apartments ($\sigma_{Owner \text{ like } 'VonHalen' \text{ (Apartment)}}$)

| ApartmentID | number | block | Owner | Area | Rooms | RoomNumber |
|-------------|--------|-------|-------------------|------|-------|------------|
| 103 | 103 | 1 | Alex VonHalen | 75 | 3 | |
| 304 | 304 | 2 | Eddie VonHalen | 30 | 1 | |
| 409 | 409 | 9 | Wolfgang VonHalen | 65 | 3 | |

e) $\Pi_{number} (\sigma_{Area > 60 \text{ (Apartment)}}) \bowtie \text{(PublicService)}$

| Number |
|--------|
| 103 |
| 306 |
| 409 |
| 310 |

2. Queries on the Owner

a) $\Pi_{name} (\sigma_{Age > 50 \text{ (Owner)}})$

| Name |
|--------------------|
| Alex VonHalen |
| Eddie VonHalen |
| David Lee Roth |
| Sommy Hagar |
| Michael Anthony |
| Valerie Bertinelli |

b) $\{ \text{Name}, \text{Age} \mid \text{Age} < 61 \wedge \text{children} \leq 3 \text{ (Owner)} \}$

| Name | Age |
|--------------------|-----|
| Chad Smith | 50 |
| Eddie Van Halen | 58 |
| Valerie Bertinelli | 65 |

c) $\{ \text{Name}, \text{Age}, \text{Children} \mid 40 < \text{Age} < 60 \text{ (Owner)} \}$

| Name | Age | Children |
|-----------------|-----|----------|
| Chad Smith | 50 | 2 |
| Neil Peart | 45 | 1 |
| Eddie Van Halen | 58 | 2 |

d) $\{ \text{Name} \mid \text{Name} \text{ like } \%, \text{ani}\% \text{ (Owner)} \}$

| OwnerID | Name | Age | Children | Pets |
|---------|----------------|-----|----------|------|
| 5 | David Lee Roth | 55 | 1 | 0 |
| 6 | Sommy Lager | 65 | 2 | 1 |
| 8 | Gary Cherone | 40 | 1 | 0 |

e) $\{ \text{Name} \mid \text{pets} \geq 1 \wedge \text{children} \leq 2 \text{ (Owner)} \}$

| Name |
|-----------------|
| Chad Smith |
| Eddie Van Halen |

3. Queries on the reservation (10) 85 min, 10) 90 min, 10)

a) P NewYearReservation (\forall ApartmentNumber, Owner, CommonSpace
 $(\exists \text{Date} = '2024-01-01' \text{ (Reservations)})$)

| Apartment Number | Owner | Common Space |
|---------------------|------------|-----------------|
| 101 | Chad Smith | soccer field |

b) \forall Owner $(\exists \text{Date} > '2024-01-02 \wedge (\text{CommonSpace} = 'pool' \vee \text{Apartment}$
 $\text{Number} = 102) \text{ (Reservations)})$

| Owner |
|----------------|
| Alex Von Hohen |

c) \forall ReservationID, CommonSpace (\exists Reservations)

| Reservation ID | CommonSpace |
|-------------------|--------------|
| 1 | soccer field |
| 2 | Pool |
| 3 | 64m |
| 4 | Pool |
| 5 | soccer field |
| 6 | 64m |
| 7 | pool |
| 8 | 64m |
| 9 | soccer field |
| 10 | pool |