

## Assignment 2 – Database and Information Modelling

Aman Lal – 791650

[amanl@student.unimelb.edu.au](mailto:amanl@student.unimelb.edu.au)

Q.1 List the ten most common tenant surnames and how many have each name.

Ans.1 `SELECT``surname, COUNT(surname) AS count``FROM``tenant``GROUP BY surname``ORDER BY count DESC``LIMIT 10;`

|   | surname | count |
|---|---------|-------|
| ► | Wang    | 20    |
|   | Li      | 8     |
|   | Yang    | 7     |
|   | Wu      | 6     |
|   | Chen    | 6     |
|   | Liu     | 6     |
|   | Zhao    | 5     |
|   | Smith   | 5     |
|   | Brown   | 4     |
|   | Zhang   | 4     |

Results returned: 10

Q.2 How many properties have never been rented, and what is their average rent?

Ans.2. `select count(id), avg(rent) from property``where id not in``(select property from tenancy);`

|   | count(id) | avg(rent) |
|---|-----------|-----------|
| ► | 879       | 422.5688  |

Results Returned: 1

Q.3 The tenant "Deidra Kingsley" just phoned the office. Find the address of their current tenancy (not a tenancy that has already ended).

Ans.3 **SELECT**

Property.id AS unitnum,

propertynum,

street,

suburb,

postcode

**FROM**

Property

**INNER JOIN**

Tenancy ON property.id = tenancy.Property

**INNER JOIN**

Tenant ON tenancy.Tenant = tenant.id

**WHERE**

givenName = 'deidra'

AND surname = 'kingsley'

AND dateEnd IS NULL;

|   | unitnum | propertynum | street     | suburb  | postcode |
|---|---------|-------------|------------|---------|----------|
| ▶ | 354     | 67          | Kay street | Carlton | 3053     |

**Results Returned: 1**

Q.4 List out all the tenants who were renting shared accommodation on the 1st of January, 2015.

Ans.4 `SELECT DISTINCT`

`(Tenant.id), givenName, tenant.surname`

`FROM`

`Tenancy`

`INNER JOIN`

`Property ON tenancy.Property = property.id`

`INNER JOIN`

`shared ON shared.id = property.id`

`INNER JOIN`

`tenant ON tenancy.tenant = tenant.id`

`WHERE`

`dateEnd >= 2015 - 01 - 01`

`OR dateEnd IS NULL`

`ORDER BY surname;`

|   | id  | givenName | surname  |
|---|-----|-----------|----------|
| ► | 41  | Birdie    | Hillsman |
|   | 67  | Davida    | Lee      |
|   | 117 | Sophia    | Sharma   |
|   | 129 | Noah      | Smith    |
|   | 128 | William   | Smith    |
|   | 132 | Thomas    | Sova     |
|   | 148 | Ruby      | Wang     |
|   | 174 | Emma      | Wilson   |
|   | 185 | Charlie   | Yang     |

Results Returned: 9

Q.5 For each property type show the number of properties and the average advertised rent for that type.

Ans.5.

```
SELECT
    PropertyType, COUNT(PropertyType), AVG(rent)
FROM
    property
GROUP BY PropertyType;
```

|   | PropertyType | COUNT(PropertyType) | AVG(rent) |
|---|--------------|---------------------|-----------|
| ▶ | A            | 225                 | 395.4756  |
|   | H            | 652                 | 479.4417  |
|   | S            | 107                 | 144.3645  |

Results Returned: 3

Q.6 List all the tenancies which have completed. For each tenancy, show the total rent paid over the period of the tenancy.

```
Ans.6.  SELECT
    tenancy.tenant AS Tenant,
    tenancy.Property,
    (DATEDIFF(dateEnd, dateStart) / 7) * tenancy.rent AS Total
FROM
    Tenancy
WHERE
    dateEnd IS NOT NULL
ORDER BY Total DESC;
```

|   | Tenant | Property | Total      |
|---|--------|----------|------------|
| ▶ | 47     | 176      | 52038.5714 |
|   | 117    | 859      | 44425.7143 |
|   | 11     | 338      | 41714.2857 |
|   | 70     | 504      | 41714.2857 |
|   | 160    | 13       | 37751.4286 |
|   | 5      | 666      | 35352.8571 |
|   | 146    | 378      | 34310.0000 |
|   | 86     | 815      | 31807.1429 |
|   | 15     | 155      | 29512.8571 |
|   | 194    | 386      | 29095.7143 |
|   | 98     | 870      | 29095.7143 |

Results Returned: 79

Q.7. Show the total income from completed tenancies for each postcode. Your answer should look like a table with two columns and one row per postcode.

Ans.7: `SELECT`

`Property.Postcode AS Postcode,`

`SUM(DATEDIFF(dateEnd, dateStart) / 7 * tenancy.rent) AS Total`

`FROM`

`property`

`INNER JOIN`

`tenancy ON Property.id = tenancy.property`

`WHERE`

`tenancy.dateEnd IS NOT NULL`

`GROUP BY property.postcode;`

|   | Postcode | Total       |
|---|----------|-------------|
| ▶ | 3053     | 931427.8572 |
|   | 3065     | 846839.2854 |

Results Returned: 2

Q.8. In which streets do most of our current tenants live? List the top ten streets and the number of current tenancies in each.

Ans.8:

```
SELECT
    Property.street AS Street,
    COUNT(Property.id) AS currenttenants
FROM
    property
    INNER JOIN
        Tenancy ON Property.id = Tenancy.Property
WHERE
    dateEnd IS NULL
GROUP BY Street
ORDER BY currenttenants DESC
LIMIT 10;
```

|   | Street                | currenttenants |
|---|-----------------------|----------------|
| ► | Drummond street       | 5              |
|   | Little charles street | 3              |
|   | Brunswick street      | 3              |
|   | Bouverie street       | 2              |
|   | Argyle street         | 2              |
|   | Smith street          | 2              |
|   | Kerr street           | 2              |
|   | Nicholson street      | 1              |
|   | Cardigan street       | 1              |
|   | Grattan street        | 1              |

Results Returned: 10

Q.9. Print a table grouping all houses and apartments by number-of-rooms, showing the average advertised rent for each number.

Ans.9:

```
SELECT
    bedrooms, AVG(rent)
FROM
    ((SELECT
        Property.id AS ID,
        House.numBedrooms AS bedrooms,
        Property.rent AS rent
    FROM
        property
    INNER JOIN House ON House.id = property.id) UNION (SELECT
        Property.id AS ID,
        Apartment.numBedrooms AS bedrooms,
        Property.rent AS rent
    FROM
        property
    INNER JOIN Apartment ON apartment.id = property.id))
GROUP BY bedrooms;
```

|   | bedrooms | AVG(rent) |
|---|----------|-----------|
| ▶ | 1        | 347.9675  |
|   | 2        | 400.0146  |
|   | 3        | 449.4812  |
|   | 4        | 546.7605  |

Results Returned: 4

Q.10. On which day of the week (Monday, Tuesday etc.) are most contacts from tenants received?  
Show how many contacts have been received on that day.

Ans.10:

```
SELECT
    DAYNAME(whenContacted) AS MostContactedDay,
    COUNT(contact.id) AS count
FROM
    contact
GROUP BY MostContactedDay
ORDER BY count DESC
LIMIT 1;
```

|   | MostContactedDay | count |
|---|------------------|-------|
| ▶ | Wednesday        | 7     |

Results Returned: 1

Q.11: Which of our tenants have taken out more than one tenancy, and are also current tenants?  
List their given and surnames and the number of tenancies each has had.

Ans.11:

```
SELECT
    tenant.givenName,
    tenant.surname,
    COUNT(*) AS numeroftenancies
FROM
    tenant
    INNER JOIN
    tenancy ON tenancy.Tenant = tenant.id
WHERE
    tenancy.Tenant IN (SELECT
        tenancy.Tenant
    FROM
        tenancy
    WHERE
```



dateEnd IS NULL)

GROUP BY tenancy.Tenant

HAVING COUNT(\*) > 1

ORDER BY COUNT(\*) DESC;

|   | givenName | surname    | numberoftenancies |
|---|-----------|------------|-------------------|
| ▶ | Thomas    | Sova       | 3                 |
|   | Ella      | Yang       | 2                 |
|   | Olivia    | Schlachter | 2                 |
|   | Alec      | Low        | 2                 |
|   | Fletcher  | Kottwitz   | 2                 |
|   | Jettie    | Dodson     | 2                 |
|   | William   | Smith      | 2                 |
|   | Amelia    | Schrom     | 2                 |
|   | Emma      | Wang       | 2                 |
|   | Samuel    | Taylor     | 2                 |
|   | Luigi     | Li         | 2                 |

Results Returned: 18

Q.12. Print a list (one column without duplicates) of the different ways tenants used to contact us about rent (i.e. the comments include the word “rent”).

Ans.12:

SELECT DISTINCT

(contacttype.description) AS Ways

FROM

contact

INNER JOIN

contacttype ON contacttype.id = contact.ContactType

WHERE

comments LIKE '%rent%'

GROUP BY Ways;

|   | Ways         |
|---|--------------|
| ▶ | email        |
|   | face-to-face |
|   | phone        |

Results Returned: 3

Q.13. what percentage of our contacts with tenants include the word 'cat'?

Ans.13:SELECT

```
@catcount / @totalcount * 100 AS percentage  
FROM  
(SELECT  
  @catcount:=COUNT(*)  
FROM  
  contact  
WHERE  
  comments LIKE '%cat%' UNION SELECT  
  @totalcount:=COUNT(*) AS totalcount  
FROM  
  contact) cats  
LIMIT 1;
```

|   |            |
|---|------------|
|   | percentage |
| ▶ | 25         |

Results Returned: 1

Q.14. Those tenants who have called about cats - do they currently live in houses, apartments or shared accommodation? Print a table showing the number of cat-related contacts from each of these three types of accommodation.

Ans.14:

SELECT

propertytype.description AS PropertyType, COUNT(\*) AS Total

FROM

property

INNER JOIN

tenancy ON property.id = tenancy.Property

INNER JOIN

propertytype ON property.PropertyType = propertytype.id

WHERE

tenancy.Tenant IN (SELECT

contact.Tenant

FROM

contact

WHERE

comments LIKE '%cat%')

and

tenancy.dateEnd is null

GROUP BY propertytype.description

ORDER BY COUNT(\*) DESC;

|   | PropertyType | Total |
|---|--------------|-------|
| ▶ | House        | 2     |
|   | Apartment    | 1     |

Results Returned : 2

Q.15. List the tenants who have contacted us in all the different ways there are to make contact. Show their id, given name and surname.

Ans.15.

SELECT

Tenant.id,

tenant.givenName,

tenant.surname,

COUNT(DISTINCT (contact.contacttype)) AS Ways

FROM

contact

INNER JOIN

Tenant ON contact.Tenant = tenant.id

GROUP BY tenant.id

ORDER BY Ways DESC;

|   | id  | givenName | surname | Ways |
|---|-----|-----------|---------|------|
| ► | 198 | Lucas     | Zhou    | 3    |
|   | 148 | Ruby      | Wang    | 1    |
|   | 37  | Fidelia   | Hampson | 1    |
|   | 82  | Alec      | Low     | 1    |
|   | 128 | William   | Smith   | 1    |
|   | 155 | Ava       | Wang    | 1    |
|   | 44  | Heriberto | Howse   | 1    |
|   | 84  | Elia      | Martin  | 1    |
|   | 132 | Thomas    | Sova    | 1    |
|   | 174 | Emma      | Wilson  | 1    |
|   | 53  | Helen     | Kelly   | 1    |

Results Returned: 18