PROJECT REPORT

Team 7

ROLL No: 21BCS061, 21BCS008, 21BCS047, 21BCS041, 21BCS039

Project Idea:

The idea of the project is to automate and digitalize the data storing process of a rental company named Dream Home private limited. Our idea is to create a database with the relational aspect well maintained to make the transactions effectively. And improving data accuracy, efficiency and better customer service

Implementation Procedure:

Designing the Database Schema: We have started by designing a database schema for Dream Home's properties. This schema includes tables for property details, customer details which are divided into two types one looks for rent and the other rents his/her property, rental agreements, and lease details. We then
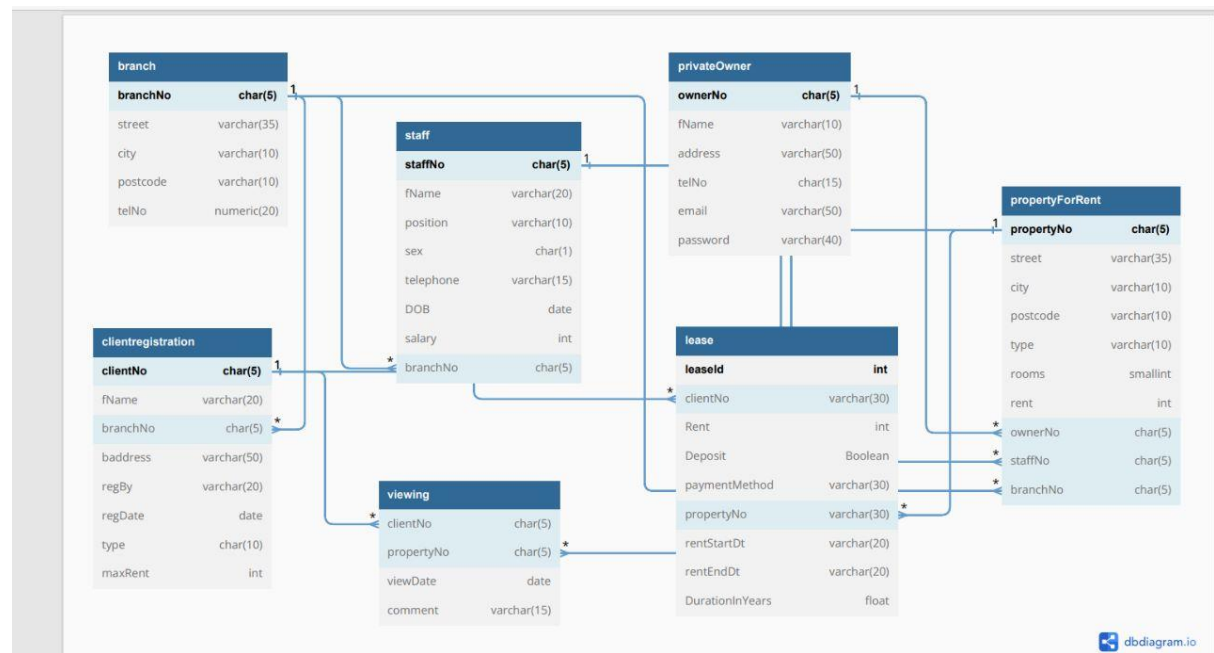
used MySQL Workbench to design the schema. We have also designed Entity relationship diagram (E-R Diagram) For better understanding of the schema.

Creating the Database: Once we have designed the schema, we will create the database in MySQL. We will create the tables, set up the relationships between them, and add sample data to test the database.

Developing the UI: We then developed a user interface (UI) to interact with the database. We used a programming language such as Python library tkinter to create the UI. The UI will allow users to perform tasks such as client registration, owner registration, registering a new property, updating property details, managing rental agreements, and viewing comments on a property.

Testing and Debugging: We have tested the database and the UI to ensure that they are working correctly. We identified and fixed any bugs or issues that we encountered during testing.
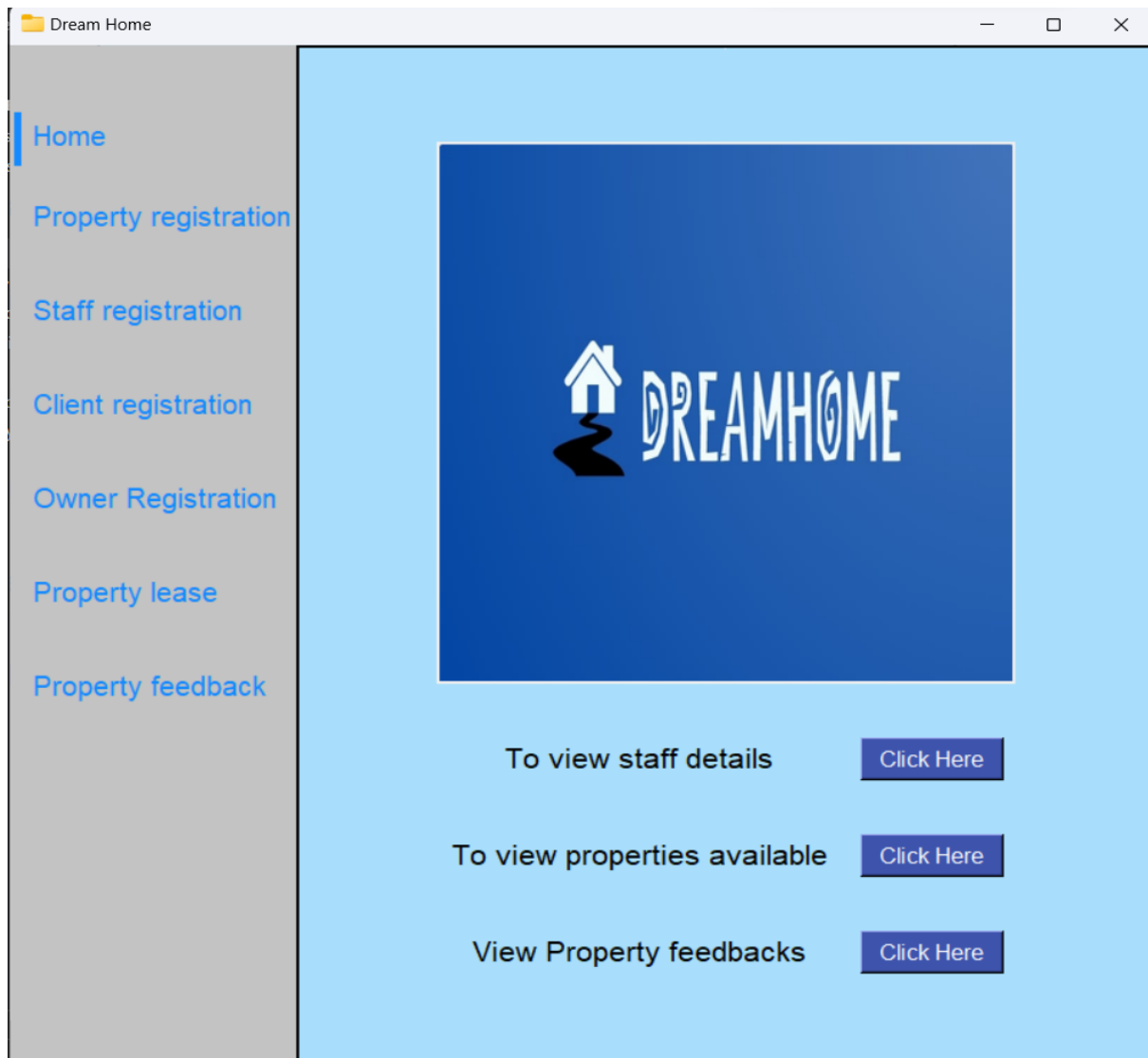
ER Diagram:

Interface:

Our interface consists of the following pages which are added as per requirements in the project.

Home page:

For client registration:

Dream Home   —   □   ✕

Home

Property registration

Staff registration

Client registration

Owner Registration

Property lease

Property feedback

Insert into clientregistration Table

Client Number	
Full name	
Branch Number	
Branch address	
staff ID	
Date	
Type	
Max Rent	

Submit

To register property:

Dream Home   — ☐ ✕

Home

Property registration

Staff registration

Client registration

Owner Registration

Property lease

Property feedback

Insert property details

Property Number

Street

City

Postcode

Type

Rooms

Rent

Owner Number

Staff Number

Branch Number

Submit

For staff registration:

Dream Home

Home

Property registration

Staff registration

Client registration

Owner Registration

Property lease

Property feedback

Enter staff details

Staff Number

Name

Position

Sex

Telephone

Date of Birth

Salary

Branch number

Submit

Entry for owner details:

Insert into Private Owner Table

Home

Property registration

Staff registration

Client registration

Owner Registration

Property lease

Property feedback

Owner Number

First Name

Address

Telephone Number

Email

Password

Submit

Property leasing details:

Insert into Lease Table

Home

Property registration

Staff registration

Client registration

Owner Registration

Property lease

Property feedback

Lease ID

Client Number

Rent

Deposit

Payment Method

Property Number

Rent Start Date (YYYY-MM-DD)

Rent End Date (YYYY-MM-DD)

Duration in Years

Insert Record

Entry form for feedback:

Dream Home   — ☐ ✕

Home	**Provide your feedback**
Property registration	Client Number [_____]
Staff registration	Property Number [_____]
Client registration	Date viewed [_____]
Owner Registration	Comments [_____]
Property lease	**Submit**
Property feedback	

View feedbacks on properties:

Feedbacks   — ☐ ✕

Property Feedback

Client Number	Property Number	Date viewed	Feedback
CR56	PA14	2015-05-24	too small
CR76	PG4	2015-04-20	too remote
CR56	PG4	2015-05-26	
CR62	PA14	2015-05-14	no dining room
CR56	PG36	2015-04-28	

Click to view feedback	Back

Staff from all branches:

View staff details

View Staff Details

Branch No [   ]

[Submit]   [All branches staff]

Staff Number	Employee Name	Sex		Position	Salary
SA9	Mary Howe	Assistant	F		6547893213
SB14	David Ford	Supervisor	M		3334455555
SG37	Ann Beech	Assistant	F		987654321
SG5	Susan Brand	Manager	F		4567891230
SL21	John White	Manager	M		123456789
SL41	Julie Lee	Assistant	F		9517532580
SL44	Ruthvik	Manager	M		9898989898

[Back]

Properties available for rentals:

View properties available

View properties available

Property Number	City	Type	Rent
PA14	Aberdeen	House	650
PG16	Glasgow	Flat	450
PG21	Glasgow	House	600
PG4	Glasgow	Flat	350

[Click Here to view details]   [Back]

To view staff at specific branch

View Staff Details

Branch No   B003

[Submit]   [All branches staff]

Staff Number	Employee Name	Sex	Position	Salary
SG37	Ann Beech	F	Assistant	12000
SG5	Susan Brand	F	Manager	24000

[Back]

Queries:

Queries required by the Branch:

(a)List the details of branches in a given city.

```
167        -- a)
168 •      select * from branch where city = 'London';
169
```

branchNo	street	city	postcode	telNo	supervisor_staffNo	manager_staffNo
B002	56 Clover Dr	London	NW10 6EU	403355722	NULL	NULL
B005	22 Deer Rd	London	SW1 4EH	403355755	NULL	SL21
NULL	NULL	NULL	NULL	NULL	NULL	NULL

(b) Identify the total number of branches in each city.

```
170        -- b)
171 •      select  count(branchNo) from branch where city = 'Glasgow';
172
```

count(branchNo)
1

(c) List the name, position, and salary of staff at a given branch, ordered by staff name.

```
173      -- c)
174 •    select * from staff  order by branchNo;
175
```

staffNo	fName	position	sex	telephone	DOB	salary	branchNo
SB14	David Ford	Supervisor	M	3334455555	1978-03-24	18000	B002
SG37	Ann Beech	Assistant	F	987654321	1980-11-10	12000	B003
SG5	Susan Brand	Manager	F	4567891230	1960-06-03	24000	B003
SL21	John White	Manager	M	123456789	1965-10-01	30000	B005
SL41	Julie Lee	Assistant	F	9517532580	1985-06-13	9000	B005
SA9	Mary Howe	Assistant	F	6547893213	1990-02-19	9000	B007
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

staff 3 ✕

Output

(d) Identify the total number of staff and the sum of their salaries.

```
175
176      -- d)
177 •    select count(staffNo),sum(salary) as total from staff;
178
```

count(staffNo)	total
6	102000

(e) Identify the total number of staff in each position at branches in Glasgow.

```
179     -- e)
180 •   select count(staffNo),position
181     from staff ,branch
182     where staff.branchNo=branch.branchNo and  city='Glasgow' group by position;
183
184     -- f)
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

count(staffNo)	position
1	Assistant
1	Manager

(f) List the name of each Manager at each branch, ordered by branch address

```
183
184     -- f)
185 •   select branchNo,staffNo,fName,Sex,telephone
186     from staff
187     where position ='Manager' order by branchNo;
188
```

Result Grid | Filter Rows: | Edit: | Export

branchNo	staffNo	fName	Sex	telephone
B003	SG5	Susan Brand	F	4567891230
B005	SL21	John White	M	123456789
NULL	NULL	NULL	NULL	NULL

staff 6 ✕

(g) List the names of staff supervised by a named Supervisor.

```
187     where position = Manager   order by branchNo;
188
189     -- g)
190 •   select staffNo,fName,Sex,telephone
191     from staff,branch
192     where staff.branchNo=branch.branchNo and position ='Supervisor' order by city;
193
194     -- h)
```

Result Grid	Filter Rows:		Export:	Wrap Cell Content:
staffNo	fName	Sex	telephone	
SB14	David Ford	M	3334455555	

(h) List the property number, address, type, and rent of all properties in Glasgow, ordered by rental amount.

```
193
194     -- h)
195 •   select propertyNo , street,city , type , rent
196     from propertyforrent
197     where city = 'Glasgow'
198     order by rent;
199
200     -- i)
```

Result Grid	Filter Rows:		Edit:	Export/Imp
propertyNo	street	city	type	rent
PG4	6 Lawrence St	Glasgow	Flat	350
PG36	2 Manor Rd	Glasgow	Flat	375
PG16	5 Novar Dr	Glasgow	Flat	450
PG21	18 Dale Rd	Glasgow	House	600
NULL	NULL	NULL	NULL	NULL

(i) List the details of properties for rent managed by a named member of staff.

```
199
200      -- i)
201 •    select * from propertyforRent
202      where StaffNo is not null;
203
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: IA

propertyNo	street	city	postcode	type	rooms	rent	ownerNo	staffNo	branchNo
PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007
PG16	5 Novar Dr	Glasgow	G12 9AX	Flat	4	450	CO93	SG37	B003
PG21	18 Dale Rd	Glasgow	G12	House	5	600	CO87	SG37	B003
PG36	2 Manor Rd	Glasgow	G32 4QX	Flat	3	375	CO93	SG37	B003
PL94	6 Argyll St	London	NW2	Flat	4	400	CO87	SL41	B005
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

propertyforRent 9 ×

(j) Identify the total number of properties assigned to each member of staff at a given branch.

```
203
204      -- j)
205 •    select count(s.propertyNo),s.staffNo
206      from propertyforrent as s,propertyforrent as t
207      where (s.staffNo,s.propertyNo)=(t.staffNo,t.propertyNo) and s.staffNo is not null
208      group by s.staffNo;
209
210      -- k)
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

count(s.propertyNo)	staffNo
1	SA9
3	SG37
1	SL41

(k) List the details of properties provided by business owners at a given branch.

```
210     -- k)
211 •   select propertyforrent.ownerNo,propertyNo,type,rooms,rent,street,city,postcode,fname,branchNo
212     from propertyforrent ,privateowner
213     where propertyforrent.ownerNo=privateowner.ownerNo
214     order by branchNo;
215
216     -- l)
```

ownerNo	propertyNo	type	rooms	rent	street	city	postcode	fname	branchNo
CO40	PG4	Flat	3	350	6 Lawrence St	Glasgow	G11 9QX	Tina Murphy	B003
CO87	PG21	House	5	600	18 Dale Rd	Glasgow	G12	Carol Farrel	B003
CO93	PG16	Flat	4	450	5 Novar Dr	Glasgow	G12 9AX	Tony Shaw	B003
CO93	PG36	Flat	3	375	2 Manor Rd	Glasgow	G32 4QX	Tony Shaw	B003
CO87	PL94	Flat	4	400	6 Argyll St	London	NW2	Carol Farrel	B005
CO46	PA14	House	6	650	16 Holhead	Aberdeen	AB7 5SU	Joe Keogh	B007

Result 11 ✕

(l) Identify the total number of properties of each type at all branches

```
215
216     -- l)
217 •   select count(propertyNo),type
218     from propertyforrent group by type;
219
```

count(propertyNo)	type
2	House
4	Flat

(m) Identify the details of private property owners that provide more than one property for rent.

```
220        -- m)
221          -- (wrong) select * from privateOwner,propertyforRent where privateOwner.OwnerN
222
223  •    select * from privateowner
224   ⊖  where ownerNo in (
225        select ownerNo
226        from propertyforrent
227        group by ownerNo
228        having count(*)>1);
229
230
231        -- n)
```

ownerNo	fName	address	telNo	email	password
CO87	Carol Farrel	6 Achray St. Glasgow G32 9DX	0141-357-7419	cfarrel@gmail.com	NULL
CO93	Tony Shaw	12 Park Pl. Glasgow G4 0QR	0141-225-7025	tony.shaw@ark.com	NULL
NULL	NULL	NULL	NULL	NULL	NULL

(n) Identify flats with at least three rooms and with a monthly rent no higher than £500 in Aberdeen.

```
230
231        -- n)
232  •    select *
233        from propertyforRent
234        where type='flat' and rent<500 and rooms =3 and city ='Aberdeen';
235
236  •    select *
237        from propertyforrent
238   ⊖  where type='Flat' and propertyNo in (select propertyNo
239                                            from propertyforrent
240                                            where rent<500 and city='Aberdeen' and rooms>=3);
241
242
243        -- o)
```

propertyNo	street	city	postcode	type	rooms	rent	ownerNo	staffNo	branchNo
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

(o) List the number, name, and telephone number of clients and their property preferences at a given branch.

```
242
243         -- o)
244  •      select ClientRegistration.branchNo,ClientNo,fName,type,MaxRent
245         from ClientRegistration,Branch
246         where ClientRegistration.branchNo=Branch.branchNo;
247
248         -- p)
249
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

branchNo	ClientNo	fName	type	MaxRent
B002	CR54	Belinda	House	900
B005	CR56	Edward	House	850
B007	CR62	Ariana	House	1600
B003	CR74	Nathan	Flat	600
B003	CR76	Elena	Flat	700

(p) Identify the properties that have been advertised more than the average number of times.

```
249
250  •      SELECT leaseId
251         FROM lease
252         WHERE lease.rentEndDt BETWEEN now() AND date_add(now(),interval 1 month);
253
```
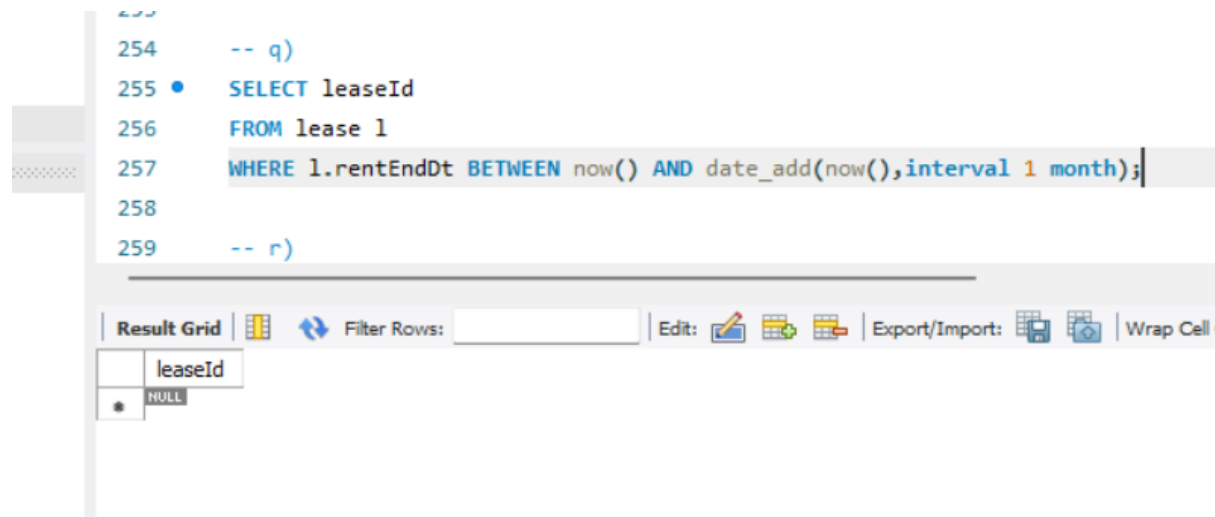
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Conte

leaseId
NULL

Since we have taken the lease to be of 1 year we don't have data related to monthly lease

(q) List the details of leases due to expire next month at a given branch.
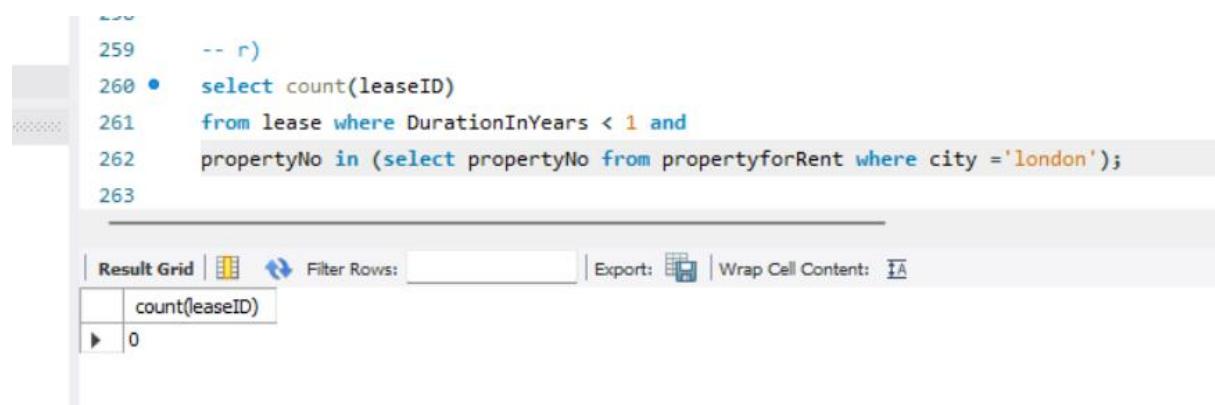
```
254       -- q)
255  •    SELECT leaseId
256       FROM lease l
257       WHERE l.rentEndDt BETWEEN now() AND date_add(now(),interval 1 month);
258
259       -- r)
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell

leaseId
NULL

(r) List the total number of leases with rental periods that are less than one year at branches in London.

```
259       -- r)
260  •    select count(leaseID)
261       from lease where DurationInYears < 1 and
262       propertyNo in (select propertyNo from propertyforRent where city ='london');
263
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

count(leaseID)
0

Since rental period is calculated year-wise less than 1 year time data is not present

(s) List the total possible daily rental for property at each branch, ordered by branch number.

```
158     from lease;
159
160 •   select branchNo,rent/30 as daily_rental
161     from propertyforrent
162     order by branchNo;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

branchNo	daily_rental
B007	21.6667
B007	3.3333
B003	15.0000
B003	20.0000
B003	12.5000
B003	11.6667
B005	13.3333

Result 13 ×

Queries required by the Staff:

(a) List details of staff supervised by a named Supervisor at the branch.

```
266    -- a
267
268 •  SELECT staff.staffNo, staff.fName, staff.position, staff.sex, staff.telephone, staff.DOB, staff.salary, staff.branchNo
269    FROM staff
270    INNER JOIN branch ON staff.branchNo = branch.branchNo
271    where staff.position = 'Assistant';
272
273    -- b
```

staffNo	fName	position	sex	telephone	DOB	salary	branchNo
SA9	Mary Howe	Assistant	F	6547893213	1990-02-19	9000	B007
SG37	Ann Beech	Assistant	F	987654321	1980-11-10	12000	B003
SL41	Julie Lee	Assistant	F	9517532580	1985-06-13	9000	B005

(b) List details of all Assistants alphabetically by name at the branch.

```
272
273        -- b
274 •      select fName
275        from staff
276        where position = 'Assistant'
277        -- group by branchNo
278        order by fName ASC;
279
```

Result Grid | Filter Rows: | Export:

fName
Ann Beech
Julie Lee
Mary Howe

(c) List the details of property (including the rental deposit) available for rent at the branch, along with the owner's details.

```
279
280        -- c  // deposit ledu ??
281 •      select p.propertyNo , p.ownerNo ,p.branchNo
282        from propertyforrent p,privateowner o;
283
```

Result Grid | Filter Rows: | Export: | Wrap Cell Cor

propertyNo	ownerNo	branchNo
PA14	CO46	B007
PA14	CO46	B007
PA14	CO46	B007
PA14	CO46	B007
PG16	CO93	B003
PG16	CO93	B003
PG16	CO93	B003

(d) List the details of properties managed by a named member of staff at the branch.

```
284
285      -- d
286 ●    select p.propertyNo ,p.staffNo,p.branchNo
287      from propertyforrent p,staff s
288      where p.staffNo = s.staffNo;
289
```

Result Grid | Filter Rows: | Export: | Wrap C

propertyNo	staffNo	branchNo
PA14	SA9	B007
PG16	SG37	B003
PG21	SG37	B003
PG36	SG37	B003
PL94	SL41	B005

(e) List the clients registering at the branch and the names of the members of staff who registered the clients.

```
289
290      -- e // staff names clientreg lo names diff
291
292 ●    select r.clientNo , s.fName,s.branchNo
293      from clientregistration r , staff s
294      where r.fName = s.fName;
295
```

Result Grid | Filter Rows: | Export: | Wrap Cell Con

clientNo	fName	branchNo

(f) Identify properties located in Glasgow with rents no higher than £450.

```
296
297     -- f
298 •   select * from propertyforrent
299     where city = 'Glasgow' and rent < 450;
300
301     -- g
```

	propertyNo	street	city	postcode	type	rooms	rent	ownerNo	staffNo	branchNo
▶	PG36	2 Manor Rd	Glasgow	G32 4QX	Flat	3	375	CO93	SG37	B003
	PG4	6 Lawrence St	Glasgow	G11 9QX	Flat	3	350	CO40	NULL	B003
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

(g) Identify the name and telephone number of an owner of a given property.

```
300
301     -- g
302
303 •   select DISTINCT r.ownerNo , p.fName, p.telNo
304     from privateowner p ,propertyforrent r
305     where p.ownerNo = r.ownerNo;
306
307     -- h
```

	ownerNo	fName	telNo
▶	CO40	Tina Murphy	0141-943-1728
	CO46	Joe Keogh	01224-861212
	CO87	Carol Farrel	0141-357-7419
	CO93	Tony Shaw	0141-225-7025

(h) List the details of comments made by clients viewing a given property.

```
307     -- h
308 •   select comment , clientNo
309     from viewing ;
310
```

Result Grid | Filter Rows:

comment	clientNo
too remote	CR76
too small	CR56
	CR56
no dining room	CR62
	CR56

(i) Display the names and phone numbers of clients who have viewed a given property but not supplied comments.

```
311     -- i
312 •   select v.comment, v.clientNo , c.fName
313     from viewing v , clientregistration c
314     where v.comment is NULL;
315
316     -- j
```

Result Grid | Filter Rows: | Export: | Wr

comment	clientNo	fName

(j) Display the details of a lease between a named client and a given property.

```
316     -- j
317
318 •   select l.clientNo, p.propertyNo
319     from lease l , propertyforrent p
320     where l.propertyNo = p.propertyNo;
321
322     -- k
```

Result Grid | Filter Rows: | Export: | Wrap

clientNo	propertyNo
CR56	PG36
CR74	PL94

(k) Identify the leases due to expire next month at the branch

```
321
322     -- k
323
324 •   select * from lease
325     where rentEndDt like '31_0_2023';
326
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

leaseId	clientNo	Rent	Deposit	paymentMethod	propertyNo	rentStartDt	rentEndDt	DurationInYears
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

(l) List the details of properties that have not been rented out for more than three months.

```
326
327     -- 1  /// rented out di data ledu
328
329 ●   select *
330     from propertyforrent p ,clientregistration c;
331
332
```

propertyNo	street	city	postcode	type	rooms	rent	ownerNo	staffNo	branchNo	clientNo	fName	branchNo	baddress	regBy
PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007	CR76	Elena	B003	163 Main St, Glasgow	SA9
PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007	CR74	Nathan	B003	163 Main St, Glasgow	SA9
PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007	CR62	Ariana	B007	16 Argyll St, Aberdeen	SL21
PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007	CR56	Edward	B005	22 Deer Rd, London	SL21
PA14	16 Holhead	Aberdeen	AB7 5SU	House	6	650	CO46	SA9	B007	CR54	Belinda	B002	56 Clover Dr, London	SG37
PG16	5 Novar Dr	Glasgow	G12 9AX	Flat	4	450	CO93	SG37	B003	CR76	Elena	B003	163 Main St, Glasgow	SA9

(m) Produce a list of clients whose preferences match a particular property.

```
332
333     -- m  // prefernce ledu changes cheyyali
334
335 ●   select distinct p.branchNo , p.type,p.rent , c.clientNo
336     from propertyforrent p,clientregistration c
337     where p.type = c.type and p.rent<c.maxRent and p.branchNo = c.branchNo;
338
```

branchNo	type	rent	clientNo
B007	House	650	CR62
B003	Flat	450	CR74
B003	Flat	450	CR76
B003	Flat	375	CR74
B003	Flat	375	CR76
B003	Flat	350	CR74
B003	Flat	350	CR76

Result 32