1. List the last name, name, employee number, type of employee of all employees ordered by last name.

select emp_lname, emp_fname, emp_id, e_type
from employee as e
JOIN emp_type et on et.type_id = e.type_id
order by emp_lname asc

```
select emp_lname, emp_fname, emp_id, e_type
from employee as e
JOIN emp_type et on et.type_id = e.type_id
order by emp_lname asc
```

Output   Explain   Messages   Notifications

emp_lname character varying (25)	emp_fname character varying (25)	emp_id integer	e_type character varying (20)
Dimblebee	Alphard	208	Receptionist
Ferguson	Olivia	213	Doctor
Fishleigh	Andie	203	Doctor
Foy	Katherine	211	Receptionist
Fredricks	Oliver	214	Doctor
Houchin	Dwain	210	Receptionist
Jencken	Raquela	207	Nurse
Jirzik	Nollie	202	Doctor
McVey	Magnolia	215	Doctor
Mohammed	Aloysius	206	Nurse
Pailin	Hubie	204	Nurse
Pharo	Annie	217	Doctor
Sanders	Martin	216	Doctor
Shores	Jorma	201	Doctor
Stuchburie	Cayla	205	Nurse
Syres	Nadiria	209	Receptionist
Watson	Augustus	212	Doctor

2. List the last name, name, employee number, type of employee of all employees ordered by last name grouped by employee type.

select emp_lname, emp_fname, emp_id, e_type
from employee as e
JOIN emp_type et on et.type_id = e.type_id
order by e_type, emp_lname asc

```
select emp_lname, emp_fname, emp_id, e_type
from employee as e
JOIN emp_type et on et.type_id = e.type_id
order by e_type, emp_lname asc
```

Output   Explain   Messages   Notifications

emp_lname character varying (25)	emp_fname character varying (25)	emp_id integer	e_type character varying (20)
Ferguson	Olivia	213	Doctor
Fishleigh	Andie	203	Doctor
Fredricks	Oliver	214	Doctor
Jirzik	Nollie	202	Doctor
McVey	Magnolia	215	Doctor
Pharo	Annie	217	Doctor
Sanders	Martin	216	Doctor
Shores	Jorma	201	Doctor
Watson	Augustus	212	Doctor
Jencken	Raquela	207	Nurse
Mohammed	Aloysius	206	Nurse
Pailin	Hubie	204	Nurse
Stuchburie	Cayla	205	Nurse
Dimblebee	Alphard	208	Receptionist
Foy	Katherine	211	Receptionist
Houchin	Dwain	210	Receptionist
Syres	Nadiria	209	Receptionist

3. List the name, last name, employee number, Specialty of doctors. Group by specialty and order by last name.

```
select emp_fname, emp_lname, e.emp_id, spec_type
from employee as e
JOIN specialty s on s.emp_id = e.emp_id
order by spec_type, emp_lname asc
```

```
select emp_fname, emp_lname, e.emp_id, spec_type
from employee as e
JOIN specialty s on s.emp_id = e.emp_id
order by spec_type, emp_lname asc
```

a Output   Explain   Messages   Notifications

emp_fname character varying (25)	emp_lname character varying (25)	emp_id integer	spec_type character varying (20)
Nollie	Jirzik	202	Cardiologist
Magnolia	McVey	215	Cardiologist
Martin	Sanders	216	Endocrinologist
Annie	Pharo	217	Internist
Olivia	Ferguson	213	Neurologist
Oliver	Fredricks	214	Neurologist
Jorma	Shores	201	Neurologist
Augustus	Watson	212	Neurologist
Andie	Fishleigh	203	Pulmonologist

4. List the count of doctors per specialty order the list by specialty name.

```
select count(e.emp_id), spec_type
from employee as e
JOIN specialty s on s.emp_id = e.emp_id
group by spec_type
order by spec_type
```

```
select count(e.emp_id), spec_type
from employee as e
JOIN specialty s on s.emp_id = e.emp_id
group by spec_type
order by spec_type
```

Output   Explain   Messages   Notifications

count bigint	spec_type character varying (20)
2	Cardiologist
1	Endocrinologist
1	Internist
4	Neurologist
1	Pulmonologist

5. List the name, last name, employee number of all the nurses.

select emp_fname, emp_lname, emp_id
from employee as e
where type_id = 2

```
select emp_fname, emp_lname, emp_id
from employee as e
where type_id = 2
```

a Output   Explain   Messages   Notifications

emp_fname character varying (25)	emp_lname character varying (25)	emp_id [PK] integer
Hubie	Pailin	204
Cayla	Stuchburie	205
Aloysius	Mohammed	206
Raquela	Jencken	207

6. List the employees name, last name, employee type, salary with salaries greater than 85K.

select emp_fname, emp_lname, e_type, emp_salary
from employee as e
join emp_type et on et.type_id = e.type_id
where emp_salary > 85000
order by emp_salary desc

```
select emp_fname, emp_lname, e_type, emp_salary
from employee as e
join emp_type et on et.type_id = e.type_id
where emp_salary > 85000
order by emp_salary desc
```

Output   Explain   Messages   Notifications

emp_fname character varying (25)	emp_lname character varying (25)	e_type character varying (20)	emp_salary integer
Nollie	Jirzik	Doctor	350000
Magnolia	McVey	Doctor	345000
Martin	Sanders	Doctor	335000
Augustus	Watson	Doctor	325000
Andie	Fishleigh	Doctor	315000
Annie	Pharo	Doctor	280000
Jorma	Shores	Doctor	275000
Oliver	Fredricks	Doctor	255000
Olivia	Ferguson	Doctor	250000
Raquela	Jencken	Nurse	110000
Aloysius	Mohammed	Nurse	95000
Hubie	Pailin	Nurse	87500

7. List the name, last name, sex, patient id and room number of all the patients not discharged yet and who are older than 65 years old.

select distinct pt.p_fname, pt.p_lname, pt.p_sex, pt.p_id, ad.r_num
from patient as pt
join admittance ad on ad.p_id = pt.p_id
where pt.p_age > 65 AND
        ad.date_disch IS NULL

```
select distinct pt.p_fname, pt.p_lname, pt.p_sex, pt.p_id, ad.r_num
from patient as pt
join admittance ad on ad.p_id = pt.p_id
where pt.p_age > 65 AND
      ad.date_disch IS NULL
```

a Output   Explain   Messages   Notifications

p_fname character varying (25)	p_lname character varying (25)	p_sex character (1)	p_id integer	r_num integer
Dudley	Benton	M	104	2004
Elton	Feldmesser	M	106	2010

8. List the patient name, last name, patient id of patients discharged in one specific month (specified the month based on the data you used to populate the database).

select distinct pt.p_fname, pt.p_lname, pt.p_id
from patient as pt
join admittance ad on ad.p_id = pt.p_id
where EXTRACT(month FROM(ad.date_disch)) = 11

```
select distinct pt.p_fname, pt.p_lname, pt.p_id
from patient as pt
join admittance ad on ad.p_id = pt.p_id
where EXTRACT(month FROM(ad.date_disch)) = 11
```

a Output   Explain   Messages   Notifications

p_fname character varying (25)	p_lname character varying (25)	p_id [PK] integer
Bernadette	Bernath	112
Purcell	York	113

9. List the name and last name and room number of patients admitted through the ER and already discharged

select distinct pt.p_fname, pt.p_lname, ad.r_num, ad.date_admit, ad.date_disch
from patient as pt
join admittance ad on ad.p_id = pt.p_id
where ad.er_admit = '1' AND
          ad.date_disch IS NOT NULL
order by r_num

```
select distinct pt.p_fname, pt.p_lname, ad.r_num, ad.date_admit, ad.date_disch
from patient as pt
join admittance ad on ad.p_id = pt.p_id
where ad.er_admit = '1' AND
       ad.date_disch IS NOT NULL
order by r_num
```

a Output   Explain   Messages   Notifications

p_fname character varying (25)	p_lname character varying (25)	r_num integer	date_admit date	date_disch date
Albert	Albertson	2001	2009-09-12	2009-09-06
Faye	Castaway	2002	2016-02-08	2016-02-08
Haleigh	Elliot	2002	2020-04-29	2020-04-29
Jordan	Longhorne	2002	2013-09-07	2013-09-07
Charlton	Petley	2003	2015-05-12	2015-05-12
Indie	James	2004	2019-06-30	2019-06-30
Elton	Feldmesser	2005	2018-01-23	2018-01-24
Purcell	York	2007	2010-11-22	2010-11-22
Barb	Delion	2009	2012-07-31	2012-08-01
Cory	Dabbs	2009	2011-10-31	2011-10-31
Albert	Albertson	2010	2006-02-14	2006-02-15

10. List the name and last name, assigned room, room type and assigned nurse name and last name of patients not discharged yet.

select distinct pt.p_fname, pt.p_lname, ad.r_num, rm.num_beds, rm.r_type, e.emp_fname, e.emp_lname
from patient as pt
join admittance ad on ad.p_id = pt.p_id
join room rm on rm.r_num = ad.r_num
join employee e on e.emp_id = rm.nurse_id
where ad.date_disch IS NULL

```
select distinct pt.p_fname, pt.p_lname, ad.r_num, rm.num_beds, rm.r_type, e.emp_fname, e.emp_lname
from patient as pt
join admittance ad on ad.p_id = pt.p_id
join room rm on rm.r_num = ad.r_num
join employee e on e.emp_id = rm.nurse_id
where ad.date_disch IS NULL
```

ta Output   Explain   Messages   Notifications

p_fname character varying (25)	p_lname character varying (25)	r_num integer	num_beds integer	r_type character varying (15)	emp_fname character varying (25)	emp_lname character varying (25)
Charlton	Petley	2004	2	suite	Cayla	Stuchburie
Dudley	Benton	2004	2	suite	Cayla	Stuchburie
Elton	Feldmesser	2010	2	standard	Cayla	Stuchburie
Faye	Castaway	2010	2	standard	Cayla	Stuchburie
Haleigh	Elliot	2002	1	suite	Cayla	Stuchburie
Indie	James	2009	1	standard	Hubie	Pailin

11. List the nurse name, nurse last name and average patient they took care per month.

SELECT e.emp_fname, e.emp_lname, CAST(AVG(tbl.count) AS DECIMAL(3,2))
FROM (select em.emp_fname, em.emp_lname, em.emp_id, COUNT(ad.p_id),
                 EXTRACT(monthFROM(ad.date_admit)) as monthVal
         from employee as em
         join room rm on rm.nurse_id = em.emp_id
         join admittance ad on ad.r_num = rm.r_num
         join patient pt on pt.p_id = ad.p_id
         group by EXTRACT(month FROM(ad.date_admit)), em.emp_fname, em.emp_lname, em.emp_id
         order by em.emp_fname) as tbl
JOIN employee e on e.emp_id = tbl.emp_id
GROUP BY e.emp_fname, e.emp_lname
ORDER BY e.emp_fname

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ery Editor   Query History

```
SELECT e.emp_fname, e.emp_lname, CAST(AVG(tbl.count) AS DECIMAL(3,2))
FROM (select em.emp_fname, em.emp_lname, em.emp_id, COUNT(ad.p_id), EXTRACT(month FROM(ad.date_admit)) as monthVal
    from employee as em
    join room rm on rm.nurse_id = em.emp_id
    join admittance ad on ad.r_num = rm.r_num
    join patient pt on pt.p_id = ad.p_id
    group by EXTRACT(month FROM(ad.date_admit)), em.emp_fname, em.emp_lname, em.emp_id
    order by em.emp_fname) as tbl
JOIN employee e on e.emp_id = tbl.emp_id
GROUP BY e.emp_fname, e.emp_lname
ORDER BY e.emp_fname
```

ta Output   Explain   Messages   Notifications

emp_fname character varying (25)	emp_lname character varying (25)	avg numeric (3,2)
Aloysius	Mohammed	1.33
Cayla	Stuchburie	2.40
Hubie	Pailin	1.50
Raquela	Jencken	1.00

12. List the doctor name and last name and average patient attended per month for all the doctors.

SELECT e.emp_fname, e.emp_lname, CAST(AVG(tbl.count) AS DECIMAL(3,2))
FROM (select em.emp_fname, em.emp_lname, em.emp_id, COUNT(ad.p_id), EXTRACT(month
FROM(ad.date_admit)) as monthVal
       from employee as em
       join admittance ad on ad.doctor_id = em.emp_id
       join patient pt on pt.p_id = ad.p_id
       group by EXTRACT(month FROM(ad.date_admit)), em.emp_fname, em.emp_lname, em.emp_id
       order by em.emp_fname) as tbl
JOIN employee e on e.emp_id = tbl.emp_id
GROUP BY e.emp_fname, e.emp_lname
ORDER BY e.emp_fname

```sql
SELECT e.emp_fname, e.emp_lname, CAST(AVG(tbl.count) AS DECIMAL(3,2))
FROM (select em.emp_fname, em.emp_lname, em.emp_id, COUNT(ad.p_id), EXTRACT(month FROM(ad.date_admit)) as monthVal
    from employee as em
    join admittance ad on ad.doctor_id = em.emp_id
    join patient pt on pt.p_id = ad.p_id
    group by EXTRACT(month FROM(ad.date_admit)), em.emp_fname, em.emp_lname, em.emp_id
    order by em.emp_fname) as tbl
JOIN employee e on e.emp_id = tbl.emp_id
GROUP BY e.emp_fname, e.emp_lname
ORDER BY e.emp_fname
```

a Output   Explain   Messages   Notifications

emp_fname character varying (25)	emp_lname character varying (25)	avg numeric (3,2)
Andie	Fishleigh	1.00
Annie	Pharo	1.00
Augustus	Watson	1.00
Jorma	Shores	1.00
Magnolia	McVey	1.00
Martin	Sanders	1.20
Nollie	Jirzik	1.00
Oliver	Fredricks	1.00
Olivia	Ferguson	1.00

13. List the specialty and number of doctors for the specialty that has more than 3 doctors that make more than 100K a year.

select distinct sp.spec_type
from (select s.spec_type, COUNT(e.emp_id) as cnt
          from SPECIALTY s
          join EMPLOYEE e on e.emp_id = s.emp_id
          where e.emp_salary > 100000
          group by spec_type) as tbl
join specialty sp on sp.spec_type = tbl.spec_type
where tbl.cnt > 3

ry Editor   Query History

```
select distinct sp.spec_type
from (select s.spec_type, COUNT(e.emp_id) as cnt
        from SPECIALTY s
        join EMPLOYEE e on e.emp_id = s.emp_id
        where e.emp_salary > 100000
        group by spec_type ) as tbl
join specialty sp on sp.spec_type = tbl.spec_type
where tbl.cnt > 3
```

a Output   Explain   Messages   Notifications

spec_type character varying (20)
Neurologist

14. List the room number of any empty room.

SELECT DISTINCT r.r_num
FROM ROOM r
WHERE r.r_num NOT IN (select distinct ad.r_num
                                from admittance as ad
                                where ad.date_disch IS NULL)
ORDER BY r_num

```
SELECT DISTINCT r.r_num
FROM ROOM r
WHERE r.r_num NOT IN (select distinct ad.r_num
                                from admittance as ad
                                where ad.date_disch IS NULL)
ORDER BY r_num
```

Output   Explain   Messages   Notifications

r_num [PK] integer
2001
2003
2005
2006
2007
2008

15. List the average cost of a treatment.

SELECT CAST(AVG(costs) AS DECIMAL(5,2)) as avgcosttreatment

FROM (select distinct mc.med_id, mc.costs, trmt.p_id

      from MEDICINE_COST mc

      join TREATMENT trmt on trmt.med_id = mc.med_id AND trmt.quantity = mc.quantity) as mcs

ry Editor   Query History

```
SELECT CAST(AVG(costs) AS DECIMAL(5,2)) as avgcosttreatment
FROM (select distinct mc.med_id, mc.costs, trmt.p_id
        from MEDICINE_COST mc
        join TREATMENT trmt on trmt.med_id = mc.med_id AND trmt.quantity = mc.quantity) as mcs
```

Output   Explain   Messages   Notifications

avgcosttreatment numeric (5,2)
38.06