presentation

Database project

KMKM

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Importance of database: -

In clinical laboratories, robust database systems are crucial for the efficient and accurate management of critical laboratory and patient information. These systems act as the backbone of laboratory operations, facilitating the secure storage, retrieval, and analysis of a vast array of data, including:

- lab Branches
- Patient and staff members demographics
- Test results
- Medical history
- reports

Requirements: -

Consider a clinical laboratory database that keeps track of patients, samples, test results, reports, order providers, laboratory branches and staff members as well as the laboratory's test offerings.

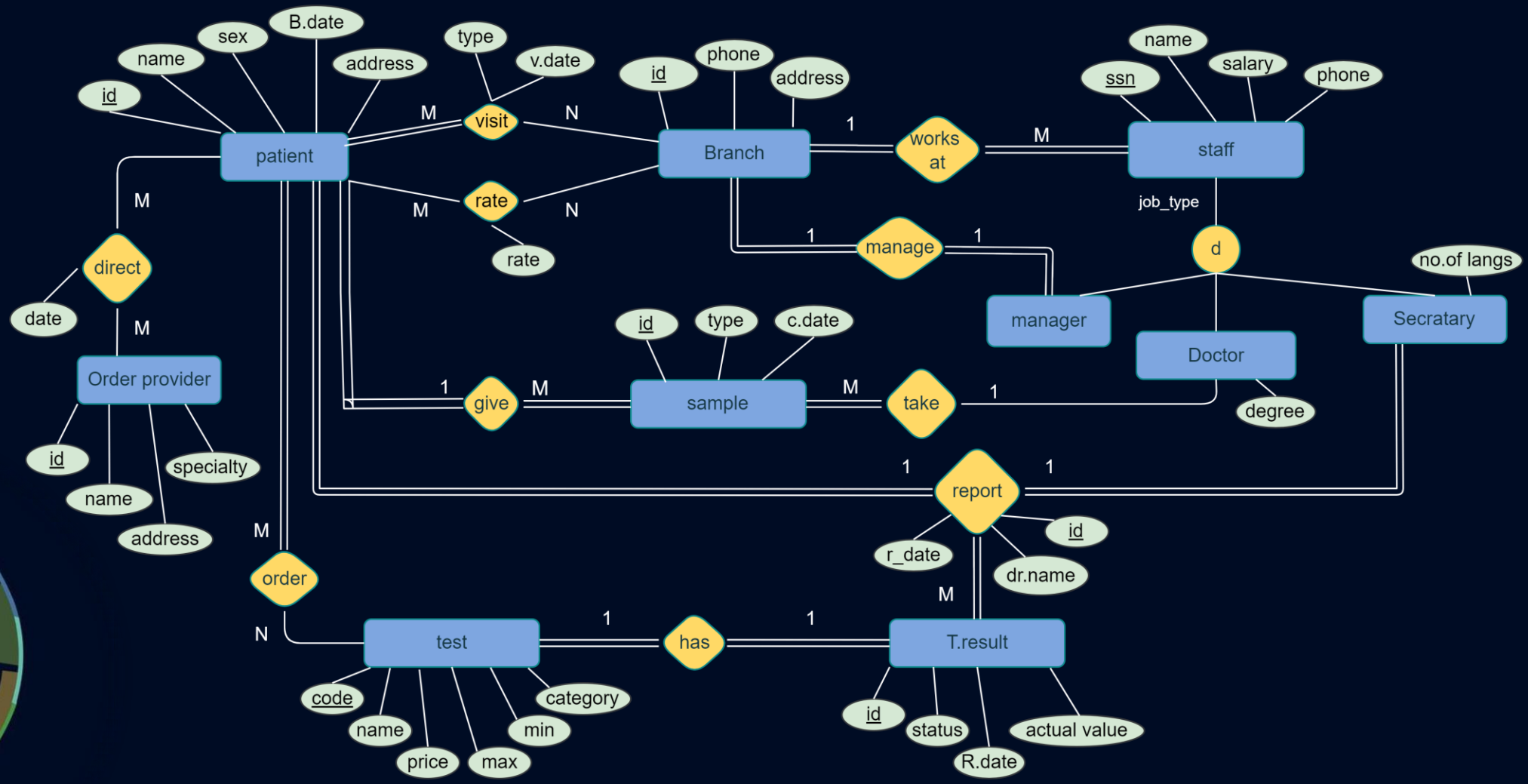
Data requirements for the clinical laboratory database are :-

- Each patient has a unique id, name, birth date, address, gender.
- The patient orders tests, gives samples and receives reports about tests.
- Each test has a unique code, name, price, maximum value, minimum value, category.
- Each test has a test result that has unique id, statues, releasing date, actual value of the test.
- Each sample has a unique id, type, collecting date.

- The database keeps track of the date and type of each patient visit as well as the rate to a lab branch.
- Each order provider has unique id, name, specialty, address.
- Order providers can direct many patients to the lab.
- Each lab branch has a unique number, phone, and address.
- Each staff member has a unique number, name, salary, phone.
- The database keeps track of staff members working at each lab branch.
- Three subclasses of the staff entity type are identified: doctors ,secretary ,and manager.
- The specific attribute of doctors is degree.
- Doctors can take many samples to be tested.
- The specific attribute of the secretary is the number of languages spoken.
- each secretary reports patients about their test results.
- Each manager can manage one branch

After understanding the requirements of clinical laboratory database create its ER model.

EER Diagram


patient
Branch
staff
visit
rate
works at
manage
direct
Order provider
give
sample
take
manager
Doctor
Secratary
d
job_type
report
order
test
has
T.result
id
name
sex
B.date
address
type
v.date
phone
ssn
salary
date
specialty
c.date
no.of langs
degree
r_date
dr.name
code
category
min
max
price
status
actual value
R.date
M
N
1

Relational Model (Mapping)

Patient (ID , Name , Sex , Address , Birth_Date)

Order_Brovider (ID ,Name,Address,Specialist)

Direct (P_ID , OP_ID ,Date)

Test (Code,Name,Min,Max,Price,Category, TR_ID) NN

Order (T_Code , P_ID) NN

Test_Result (ID,Reiesing_Date,Actual_Value)

Sample (ID,Collecting_Date,Type, P_ID , D_S_Ssn) NN

Branch (ID,Location,Name,Phone, M_Ssn) NN

Rate (B_ID ,Rating, P_ID)

Visit (B_ID ,Type,Date, P_ID) NN

Staff (Ssn,Name,Salary,Sex, B_ID) NN

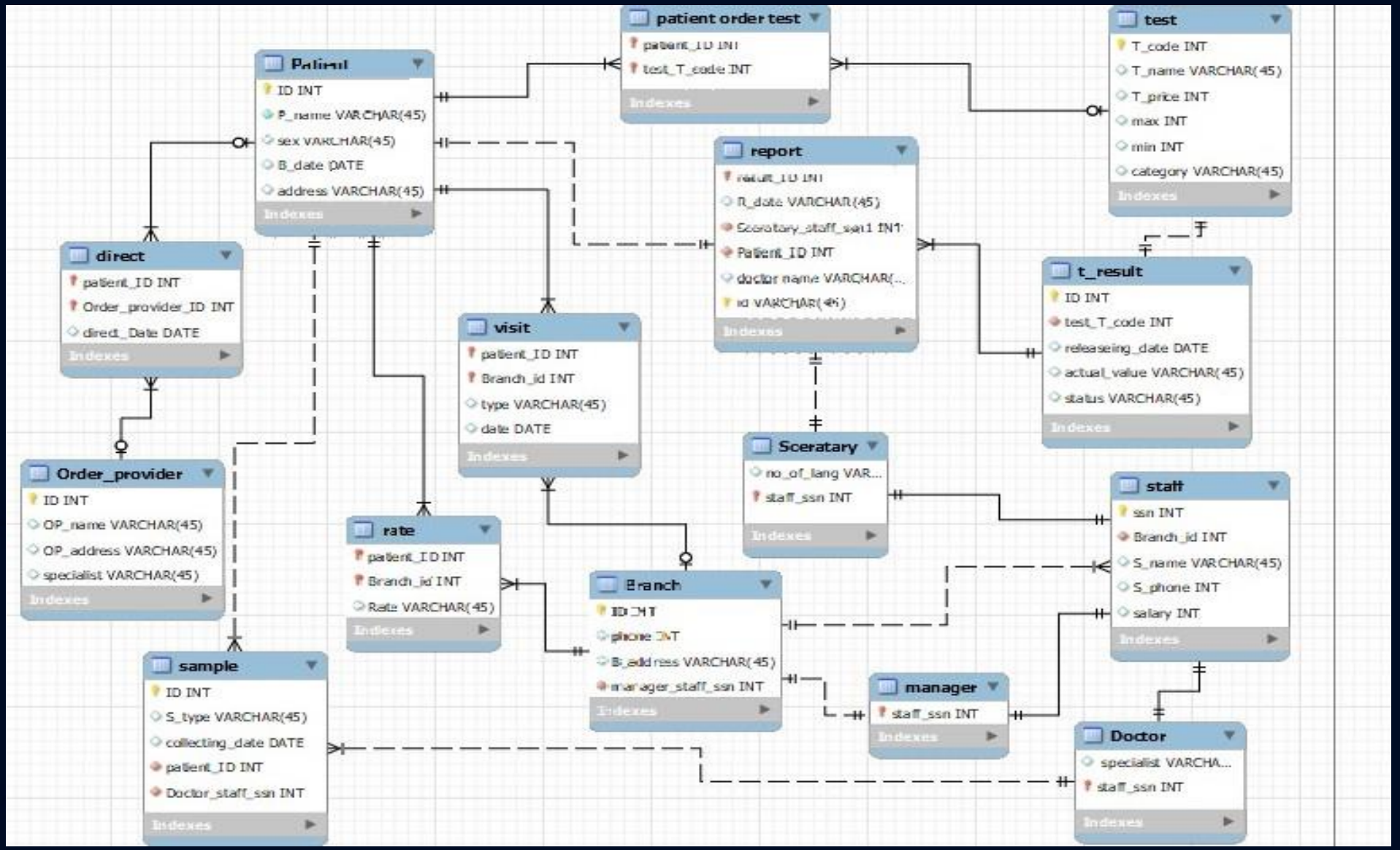
Doctor (S_Ssn ,Degree)

Secretary (S_Ssn ,No_of_Lang)

Report (ID,Date,Dr_Name, S_S_Ssn , TR_ID , P_ID) NN NN NN

Manager (S_Ssn)

ER-Diagram on Work-Bench



report

T_result_ID	R_date	Sceratary_staf	Patient_ID	doctor_name	id
6001	2022-10-19	4009	1001	John Doe	1
6002	2022-11-14	4010	1002	John henry	2
6003	2022-09-05	4011	1003	Peter Parker	3
6004	2022-04-21	4012	1004	Mary Jane Watson	4
6005	2022-06-29	4009	1005	Bruce Wayne	5
6006	2022-12-27	4010	1006	Clark Kent	6
6007	2022-01-17	4011	1007	Diana Prince	7
6008	2022-06-09	4012	1008	Arthur Curry	8
6009	2022-09-27	4009	1009	John Doe	9
6010	2022-04-01	4010	1010	John henry	10
6011	2022-11-13	4010	1002	Clark Kent	2
6012	2022-10-22	4009	1001	Bruce Wayne	1
6013	2022-04-07	4010	1010	Clark Kent	10
6014	2022-04-13	4009	1011	alejandro_balde	11
6015	2022-12-08	4010	1012	konde	12
6016	2022-12-17	4011	1013	de jong	13
6017	2022-03-14	4012	1014	pablo gavi	14
6018	2022-09-11	4009	1015	John Doe	15
6019	2022-03-14	4012	1014	Mary Jane Watson	14
6020	2022-12-08	4010	1012	Clark Kent	12
NULL	NULL	NULL	NULL	NULL	NULL

Patient

ID	P_name	sex	B_date	address
1001	John Doe	Male	1998-01-06	123 Main St, City
1002	Jane Smith	Female	1985-10-20	456 Elm St, Town
1003	Mike Johnson	Male	1978-03-08	789 Oak St, Village
1004	Emily Brown	Female	1995-12-01	321 Pine St, County
1005	David Wilson	Male	1982-07-25	654 Maple St, City
1006	Sarah Davis	Female	1993-09-12	987 Cedar St, Town
1007	Michael Thompson	Male	1975-06-18	654 Elm St, Village
1008	Jessica Taylor	Female	1988-11-05	321 Oak St, County
1009	Robert Harris	Male	1997-02-28	789 Pine St, City
1010	Olivia Martinez	Female	1991-08-10	123 Maple St, Town
1011	alaba	Male	1971-08-18	350 Fifth Avenue, New York
1012	alio diang	Male	1985-09-15	1600 Pennsylvania Avenue
1013	ali malol	Male	1995-09-12	350 Mission Street, San Francisco
1014	nicki minaj	Female	1965-11-10	5555 Melrose Ave, Los Angeles
1015	ter stegen	Male	1999-02-28	725 5th Ave, New York

direct

patient_ID	Order_provider	direct_Date
1001	11	2022-10-01
1002	13	2022-11-01
1003	13	2022-08-08
1009	14	2022-09-03
1007	12	2022-01-07
1012	15	2022-11-27
1015	15	2022-10-28
NULL	NULL	NULL

patient_order_test

patient_ID	test_T_code
1001	5001
1002	5004
1003	5006
1004	5002
1005	5005
1006	5003
1007	5001
1008	5002
1009	5003
1010	5007
1002	5001
1001	5005
1010	5004
1011	5001
1012	5005
1013	5006
1014	5002
1015	5005
1012	5004
1014	5007

Order_provider

ID	OP_name	OP_address	specialist
11	john	731 fondren,housten	Cardiologist
12	rodri	3321 castle,spring	Endocrinologist
13	sane	291 berry,bellaire	Nutritionist
14	araujo	980 dallas,housten	Internist
15	trent-arnold	1600 Smith St, Houston	Nutritionist

Secretary

no_of_lang	staff_ssn
1	4009
2	4010
1	4011
3	4012

SAMPLE

ID	S_type	patient_ID	collecting_date	Doctor_staff_s
3001	Blood Samples	1001	2022-10-12	4001
3002	Urine Samples	1002	2022-11-05	4002
3003	Swab Samples	1003	2022-08-27	4007
3004	Blood Samples	1004	2022-04-14	4008
3005	Urine Samples	1005	2022-06-21	4005
3006	Blood Samples	1006	2022-12-19	4006
3007	Blood Samples	1007	2022-01-08	4003
3008	Blood Samples	1008	2022-05-30	4004
3009	Blood Samples	1009	2022-09-16	4005
3010	Swab Samples	1010	2022-03-23	4002
3011	blood Samples	1002	2022-11-05	4006
3012	Urine Samples	1001	2022-10-12	4005
3013	Urine Samples	1010	2022-03-23	4006
3014	blood Samples	1011	2022-04-05	4013
3015	Urine Samples	1012	2022-11-30	4014
3016	Swab Samples	1013	2022-12-09	4015
3017	blood Samples	1014	2022-03-06	4016
3018	Urine Samples	1015	2022-11-01	4013
3019	Swab Samples	1014	2022-03-06	4004
3020	Urine Samples	1012	2022-11-30	4006

Visit

patient_ID	Branch_id	type	date
1001	1	home visit	2022-10-12
1002	2	branch visit	2022-11-05
1003	3	home visit	2022-08-27
1004	4	branch visit	2022-04-14
1005	1	home visit	2022-06-21
1006	2	branch visit	2022-12-19
1007	3	home visit	2022-01-08
1008	4	branch visit	2022-05-30
1009	1	home visit	2022-09-16
1010	2	branch visit	2022-03-23
1011	1	branch visit	2022-04-05
1012	2	home visit	2022-11-30
1013	3	branch visit	2022-12-09
1014	4	home visit	2022-03-06
1015	1	branch visit	2022-11-01

Rate

patient_ID	Branch_id	Rate
1001	1	5
1002	2	8
1003	3	3
1004	4	7
1005	1	10
1006	2	9
1007	3	4
1008	4	8
1009	1	9
1010	2	10
1011	1	8
1012	2	9
1013	3	7
1014	4	2
1015	1	6

Branch

ID	phone	B_address	manager_staff
1	1234567890	123 Main Street	4017
2	2147483647	456 Elm Street	4018
3	2147483647	789 Oak Street	4019
4	2147483647	1011 Maple Avenue	4020

Manager

staff_ssn
4017
4018
4019
4020

Staff

Branch_id	ssn	S_name	S_phone	salary
1	4001	John Doe	1237890	5000
2	4002	john henry	2183647	2000
3	4003	Peter Parker	2143647	6450
4	4004	Mary Jane Watson	2147478	8060
1	4005	Bruce Wayne	5143647	7750
2	4006	Clark Kent	2183647	4560
3	4007	Diana Prince	2133647	9510
4	4008	Arthur Curry	2187447	4530
1	4009	Victor Stone	1114455	4865
2	4010	Barry Allen	1478690	4560
3	4011	emilia clarke	2137420	6500
4	4012	billie eilish	2137627	7500
1	4013	alijandro_balde	2135891	7000
2	4014	kounde	2135892	8000
3	4015	de jong	2135893	9000
4	4016	pablo gavi	2135894	9500
1	4017	lamin yamal	5143612	11000
2	4018	joao feleix	5143634	11500
3	4019	ferland mendy	5143656	12000
4	4020	luka modric	5143667	12500

Test_Result

ID	test_T_code	releaseing_date	actual_value	status
6001	5001	2022-10-17	4	normal
6002	5004	2022-11-12	9	abnormal
6003	5006	2022-09-03	25	normal
6004	5002	2022-04-19	65	abnormal
6005	5005	2022-06-27	900	abnormal
6006	5003	2022-12-25	27	normal
6007	5001	2022-01-15	6	abnormal
6008	5002	2022-06-07	85	normal
6009	5003	2022-09-25	33	normal
6010	5007	2022-03-29	19	normal
6011	5001	2022-11-11	6	abnormal
6012	5005	2022-10-20	650	abnormal
6013	5004	2022-04-05	6	normal
6014	5001	2022-04-11	4	normal
6015	5005	2022-12-06	1000	normal
6016	5006	2022-12-15	23	normal
6017	5002	2022-03-12	77	normal
6018	5005	2022-11-07	955	abnormal
6019	5004	2022-03-12	5	normal
6020	5007	2022-12-06	21	abnormal

Test

T_code	T_name	T_price	max	min	category
5001	Complete Blood Count	500	5	3	blood test
5002	Blood Chemistry Panel	600	100	70	blood test
5003	Coagulation Tests	350	35	25	blood test
5004	Routine Urinalysis	240	8	4	Urinalysis
5005	Urine Culture	420	100000	1000	Urinalysis
5006	Bacterial Culture and Sensitivity	625	30	15	Microbiological Tests
5007	Fungal Culture	360	20	10	Microbiological Tests

Doctor

specialist	staff_ssn
Pathologist	4001
Microbiologist	4002
Pathologist	4003
Clinical Biochemist	4004
Microbiologist	4005
Pathologist	4006
Microbiologist	4007
Clinical Biochemist	4008
Pathologist	4013
Microbiologist	4014
Clinical Biochemist	4015
Pathologist	4016

QUERIES

*retrieve order_provider's name and patient's name sent by them and the test's name patient order

```
Limit to 1000 rows

1  use mydb;
2  select OP_name as order_provider,P_name as patient_name,direct_Date,T_name as test_name
3  from order_provider as o,patient as p,patient_order_test as ot,test as t,direct as di
4  where o.ID=di.Order_provider_ID and p.ID=di.patient_ID and  p.ID=ot.patient_ID and t.T_code=ot.test_T_code;
```

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

order_provider	patient_name	direct_Date	test_name
john	John Doe	2022-10-01	Complete Blood Count
john	John Doe	2022-10-01	Urine Culture
rodri	Michael Thompson	2022-01-07	Complete Blood Count
sane	Jane Smith	2022-11-01	Complete Blood Count
sane	Jane Smith	2022-11-01	Routine Urinalysis
sane	Mike Johnson	2022-08-08	Bacterial Culture and Sensitivity
araujo	Robert Harris	2022-09-03	Coagulation Tests
trent-arnold	alio diang	2022-11-27	Routine Urinalysis

Result 1 | Result Grid | Form Editor | Read Only

QUERIES

* retrieve report contain secretary's name that give the report and doctor name's that do the testand release date and test name and actual value of test and statu of result

```
Limit to 1000 rows

1  select r.id as report_id, P_name as patient_name , S_name as secratary_name, R_date as release_date
2   ,T_name, doctor_name, actual_value,tr.status
3  from patient as p,report as r,staff as s,sceratary as c,test as t,t_result as tr
4  where p.ID=r.Patient_ID and c.staff_ssn=r.Sceratary_staff_ssn1 and c.staff_ssn=s.ssn
5  and tr.ID=r.result_ID and tr.test_T_code=t.T_code
6   order by report_id;
```

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

report_id	patient_name	secratary_name	release_date	T_name	doctor_name	actual_value	status
1	John Doe	Victor Stone	2022-10-22	Urine Culture	Bruce Wayne	650	abnormal
1	John Doe	Victor Stone	2022-10-19	Complete Blood Count	John Doe	4	normal
10	Olivia Martinez	Barry Allen	2022-04-01	Fungal Culture	John henry	19	normal
10	Olivia Martinez	Barry Allen	2022-04-07	Routine Urinalysis	Clark Kent	6	normal
11	alaba	Victor Stone	2022-04-13	Complete Blood Count	alejandro_balde	4	normal
12	alio diang	Barry Allen	2022-12-08	Urine Culture	konde	1000	normal
12	alio diang	Barry Allen	2022-12-08	Fungal Culture	Clark Kent	21	abnormal
13	ali malol	emilia clarke	2022-12-17	Bacterial Culture and Sensitivity	de jong	23	normal
14	nicki minaj	billie eilish	2022-03-14	Routine Urinalysis	Mary Jane Watson	5	normal
14	nicki minaj	billie eilish	2022-03-14	Blood Chemistry Panel	pablo gavi	77	normal
15	ter stegen	Victor Stone	2022-09-11	Urine Culture	John Doe	955	abnormal

Result Grid | Form Editor | Field Types | Read Only

Result 2

QUERIES

* retrieve name, salary of a staff member who works at the branch that have maximum salary

```
1  select S_name, salary
2  from staff
3  where Branch_id=
4  (select Branch_id
5  from staff
6  where salary=
7  (select max(salary)
8  from staff));
```

Limit to 1000 rows

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

S_name	salary
Mary Jane Watson	8060
Arthur Curry	4530
billie eilish	7500
pablo gavi	9500
luka modric	12500

Result Grid | Form Editor

staff 4 | Read Only

QUERIES

* retrieve the secretary's name doctor's name and manager's name that works in the branch with id=1

```
Limit to 1000 rows

1  select  b.ID as Branch_ID,c.S_name as secretary_name,d.S_name as doctor_name,m.S_name as mngr_name
2  from staff as c,staff as d,staff as m,sceratary as se,doctor as dc,manager as ma,branch as b
3  where c.Branch_id=b.ID and d.Branch_id=b.ID and m.ssn=ma.staff_ssn
4  and c.ssn=se.staff_ssn and d.ssn=dc.staff_ssn and b.manager_staff_ssn=m.ssn
5  and b.ID=1;
```

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

Branch_ID	secretary_name	doctor_name	mngr_name
1	Victor Stone	John Doe	lamin yamal
1	Victor Stone	Bruce Wayne	lamin yamal
1	Victor Stone	alijandro_balde	lamin yamal

Result Grid | Form Editor | Result 4 | Read Only

QUERIES

* retrieve order provider name and the number of patient that he direct

```
1  select op_name,count(patient_id) as no_patient
2  from direct,Order_provider
3  where
4  id=order_provider_id
5  group by op_name;
```

Limit to 1000 rows

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

op_name	no_patient
araujo	1
john	1
rodri	1
sane	2
trent-arnold	2

Result Grid | Form Editor | Read Only

Result 5

QUERIES

* retrieve patient name, his/her id, branch id and the rate that is more than the average of rate for all branches

```
Limit to 1000 rows
1  select p_name, patient_id,branch_id,rate from rate,patient where
2  rate>= (select avg(rate) from rate) and id=patient_id;
```

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

p_name	patient_id	branch_id	rate
Jane Smith	1002	2	8
Emily Brown	1004	4	7
David Wilson	1005	1	10
Sarah Davis	1006	2	9
Jessica Taylor	1008	4	8
Robert Harris	1009	1	9
Olivia Martinez	1010	2	10
alaba	1011	1	8
alio diang	1012	2	9
ali malol	1013	3	7

Result Grid | Form Editor | Field Types | Read Only

Result 6

QUERIES

* retrieve all patient names and the total price in descending order

```
Limit to 1000 rows

1  select p_name,sum(t_price) as total_price
2  from patient,test,patient_order_test
3  where id=patient_id
4  and t_code=test_t_code
5  group by p_name
6  order by 2 desc;
```

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

p_name	total_price
nicki minaj	960
John Doe	920
Jane Smith	740
alio diang	660
Mike Johnson	625
ali malol	625
Jessica Taylor	600
Emily Brown	600
Olivia Martinez	600
Michael Thompson	500
alaba	500

Result 7 | Result Grid | Form Editor | Field Types | Read Only

QUERIES

* retrieve patient name, and order provider name for all patients that have been directed by a doctor or have not

```
Limit to 1000 rows

2  select P_name as patient_name  ,OP_name
3  from patient p
4  left outer join direct d
5  on p.ID= d.patient_ID
6  left outer join order_provider o
7  on d.Order_provider_ID=o.ID ;
```

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

patient_name	OP_name
John Doe	john
Jane Smith	sane
Mike Johnson	sane
Emily Brown	NULL
David Wilson	NULL
Sarah Davis	NULL
Michael Thompson	rodri
Jessica Taylor	NULL
Robert Harris	araujo
Olivia Martinez	NULL
alaba	NULL

Result 9 | Result Grid | Form Editor | Field Types | Read Only

QUERIES

* RETRIEVE patient name and number of abnormal test results for each one

```
1  select p.P_name , count(t.ID) as abnormal_tests
2  from patient p , report r , t_result t
3  where p.ID=r.Patient_ID and r.result_ID = t.ID and status in ('abnormal')
4  group by p.P_name;
```

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

P_name	abnormal_tests
alio diang	1
David Wilson	1
Emily Brown	1
Jane Smith	2
John Doe	1
Michael Thompson	1
ter stegen	1

Result 10 | Read Only

QUERIES

* retrieve branch number and manager name where rate of branch more than avg rate of all branches

```
1  select b.ID , s.S_name ,r.Rate
2  from branch b, staff s , manager m , rate r
3  where m.staff_ssn=s.ssn and  m.staff_ssn=b.manager_staff_ssn and b.ID=r.Branch_id
4  group by b.ID
5  having r.Rate > (select avg(Rate) from rate);
```

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

ID	S_name	Rate
2	joao feleix	8

Result Grid | Form Editor | Field Types

Result 11 | Read Only

QUERIES

* retrieve report of the patient has id=1014

```
Limit to 1000 rows
1  select r.id as report_id, p.ID ,  p.P_name , p.sex , r.R_date as receiving_date ,m.T_price, r.doctor_name ,
2   t.test_T_code ,t.actual_value ,t.status,m.T_name
3  from patient p , report r , t_result t , test m
4  where p.ID=r.Patient_ID and r.result_ID=t.ID and t.test_T_code=m.T_code and p.ID=1014
5  group by r.id having status in('normal');
```

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

report_id	ID	P_name	sex	receiving_date	T_price	doctor_name	test_T_code	actual_value	status	T_name
14	1014	nicki minaj	Female	2022-03-14	600	pablo gavi	5002	77	normal	Blood Chemistry Panel

Result Grid | Form Editor | Field Types

Result 12 | Read Only

QUERIES

* Retrieve test name and min value and max value for test where category = blood test

```
use mydb;
select T_name as test_name , min as min_value , max as max_value from test
where category like '%blood test%';
```

Result Grid

test_name	min_value	max_value
Complete Blood Count	3	5
Blood Chemistry Panel	70	100
Coagulation Tests	25	35

test 13

Read Only

QUERIES

* retrieve secretary name and no of language and secretary phone

```
use mydb;
SELECT s_name as secratary_name ,  no_of_lang , S_phone as secratary_phone
FROM staff s , sceratary l
where s.ssn= l.staff_ssn ;
```

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

secratary_name	no_of_lang	secratary_phone
Victor Stone	1	1114455
Barry Allen	2	1478690
emilia clarke	1	2137420
billie eilish	3	2137627

Result 14 | Read Only

QUERIES

* retrieve patient name and collecting date for Urine Samples type

```
use mydb;
select P_name as patient_name,collecting_date,S_type as sample_type
from patient p,sample s
where
p.ID=S.patient_ID AND
S_type ='Urine Samples';
```

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

patient_name	collecting_date	sample_type
Jane Smith	2022-11-05	Urine Samples
David Wilson	2022-06-21	Urine Samples
John Doe	2022-10-12	Urine Samples
Olivia Martinez	2022-03-23	Urine Samples
alio diang	2022-11-30	Urine Samples
ter stegen	2022-11-01	Urine Samples
alio diang	2022-11-30	Urine Samples

Result 15 | Read Only

QUERIES

* retrieve test result id and releasing date, test name, and category where status is abnormal

```
Limit to 1000 rows

1  use mydb;
2  select  ID as t_result_id , releaseing_date , status , T_name , category
3  from test , t_result
4  where T_code = test_T_code and
5  status in('abnormal');
```

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

t_result_id	releaseing_date	status	T_name	category
6007	2022-01-15	abnormal	Complete Blood Count	blood test
6011	2022-11-11	abnormal	Complete Blood Count	blood test
6004	2022-04-19	abnormal	Blood Chemistry Panel	blood test
6002	2022-11-12	abnormal	Routine Urinalysis	Urinalysis
6005	2022-06-27	abnormal	Urine Culture	Urinalysis
6012	2022-10-20	abnormal	Urine Culture	Urinalysis
6018	2022-11-07	abnormal	Urine Culture	Urinalysis
6020	2022-12-06	abnormal	Fungal Culture	Microbiological Tests

Result Grid | Form Editor | Field Types

Result 16 | Read Only

QUERIES

* retrieve all patient details that name have o second char

```
1  select * from patient
2  where P_name like '_o%';
```

Result Grid

ID	P_name	sex	B_date	address
1001	John Doe	Male	1998-01-06	123 Main St, City
1009	Robert Harris	Male	1997-02-28	789 Pine St, City
NULL	NULL	NULL	NULL	NULL

patient 17

QUERIES

* retrieve most expensive test from each category

```
1  select T_name, max(T_price) as max_price , category
2  from test
3  group by category
4  order by 2 asc ;
```

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

T_name	max_price	category
Routine Urinalysis	420	Urinalysis
Complete Blood Count	600	blood test
Bacterial Culture and Sensitivity	625	Microbiological Tests

Result 18 | Read Only

QUERIES

* retrieve all information from staff where salary >= 5000

```
use mydb;
 select * from staff
  where salary >= 5000
  limit 10;
```

Limit to 1000 rows

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

ssn	Branch_id	S_name	S_phone	salary
4001	1	John Doe	1237890	5000
4003	3	Peter Parker	2143647	6450
4004	4	Mary Jane Watson	2147478	8060
4005	1	Bruce Wayne	5143647	7750
4007	3	Diana Prince	2133647	9510
4011	3	emilia clarke	2137420	6500
4012	4	billie eilish	2137627	7500
4013	1	alijandro_balde	2135891	7000
4014	2	kounde	2135892	8000
4015	3	de jong	2135893	9000
NULL	NULL	NULL	NULL	NULL

Result Grid | Form Editor | Field Types

staff 21 | Apply | Revert

QUERIES

* retrieve the number of reports that were released in Abril

```
Limit to 1000 rows

1 •  Select count(id) as number_of_reports
2    From report
3    Where R_date like '%__-04%'
```

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

number_of_reports
4

Result Grid
Form Editor
Field Types

Result 22 ×

Read Only

QUERIES

* retrieve doctor_ ssn and number of samples the doctor take where collecting date between '2022-03-23' and '2022-08-27'

```
use mydb;
select   d.staff_ssn as doctor_ssn , count(ID) as no_of_sample from doctor d , staff s , sample e
where s.ssn=d.staff_ssn and d.staff_ssn = e.Doctor_staff_ssn
and e.collecting_date between '2022-03-23' and '2022-08-27'
group by d.staff_ssn;
```

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

doctor_ssn	no_of_sample
4002	1
4004	1
4005	1
4006	1
4007	1
4008	1
4013	1

Result 25 | Read Only

QUERIES

* retrieve patient name and branch id and visit where date between '2022-04-14' and '2022-11-05'

```
2  select p_name as patient_name ,v.type, Branch_id,date as visit_date
3   from patient p , visit v
4   where
5   date between '2022-04-14' and '2022-11-05'
6   and p.ID = v.patient_ID;
```

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

patient_name	type	Branch_id	visit_date
John Doe	home visit	1	2022-10-12
Jane Smith	branch visit	2	2022-11-05
Mike Johnson	home visit	3	2022-08-27
Emily Brown	branch visit	4	2022-04-14
David Wilson	home visit	1	2022-06-21
Jessica Taylor	branch visit	4	2022-05-30
Robert Harris	home visit	1	2022-09-16
ter stegen	branch visit	1	2022-11-01

Result Grid | Form Editor | Field Types

Result 26 | Read Only

QUERIES

* retrieve each branch info and average of staff salary in descending order

```
Limit to 1000 rows

1  use mydb;
2  select branch_id,avg(salary) as average_of_salary,b.phone,b.b_address from staff,branch b
3  where branch_id=b.id
4  group by branch_id
5  order by 2 desc;
```

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

branch_id	average_of_salary	phone	b_address
3	8692.0000	2147483647	789 Oak Street
4	8418.0000	2147483647	1011 Maple Avenue
1	7123.0000	1234567890	123 Main Street
2	6124.0000	2147483647	456 Elm Street

Result Grid | Form Editor | Field Types

Result 1 | Read Only


Thank You