

# Relational Model:

- Mother(**hcid**, addr, profession, name, dob, bloodtype, email, phone)
- Father(**fid**, hcid, addr, profession, name, dob, bloodtype, email, phone)
- Parent(**pid**, *hcid\**, *fid\**)
  - ❖ *hcid\** foreign key references Mother;
  - ❖ *fid\** foreign key references Father;
- HealthcareInstitution(**instid**, web, name, phone, email, addr)
- CommunityClinic(**instid**)
  - ❖ *instid\** foreign key references HealthcareInstitution.
- BirthCenter(**instid**)
  - ❖ *instid\** foreign key references HealthcareInstitution.
- Midwife(**practid**, name, email, phone, *instid\**)
  - ❖ *instid\** foreign key references HealthcareInstitution.
- Pregnancy(**pregnum**, **pid**, birthplace, expdatebirth, expdatelastperiod, expdateusound, finalestimatedate, *ppractid\**, *bpractid\**, *instid\**)
  - ❖ *pid\** foreign key reference Parent;
  - ❖ *ppractid\** foreign key reference Midwife;
  - ❖ *bpractid\** foreign key reference Midwife;
  - ❖ *instid\** foreign key reference BirthCenter.
- Appointment(**appid**, appdate, apptime, *pregnum\**, *practid\**, *pid\**)
  - ❖ (*pregnum\**, *pid\**) foreign keys reference Pregnancy;
  - ❖ *practid\** foreign key references Midwife;
- Observation(**obsid**, obstime, obsdate, obsnote, *appid\**)
  - ❖ *appid\** foreign key references Appointment.
- InfoSession(**infoid**, language, infodate, infotime, *practid\**, *pid\**)
  - ❖ *practid\** foreign key references Midwife;
  - ❖ *pid\** foreign key references Parent.
- Baby(**babyid**, babyname, dob, gender, bloodtype, borntime, numofbaby, *pregnum\**, *pid\**)
  - ❖ (*pregnum\**, *pid\**) foreign keys reference Pregnancy.
- LabTech(**techid**, name, phone)
- MedicalTest(**testid**, presdate, sampleddate, labdate, testtype, results, *practid\**, *pid\**, *pregnum\**, *babyid\**, *techid\**)
  - ❖ *practid\** foreign key references Midwife;
  - ❖ (*pid\**, *pregnum\**) foreign keys references Pregnancy;
  - ❖ *babyid\** foreign key references Baby;
  - ❖ *techid\** foreign key references LabTech;

# GoBabbyApp:

## Q3:

(a) i. Query:

```
SELECT practid FROM Midwife WHERE practid='cwang131';
```

```
db2 => connect to cs421
db2 (cont.) => ;

Database Connection Information

Database server          = DB2/LINUX8664 11.5.4.0
SQL authorization ID     = CWANG131
Local database alias     = CS421

db2 => SELECT practid FROM Midwife WHERE practid='cwang131';

PRACTID
-----

0 record(s) selected.

db2 => █
```

ii.

```

cwang131@winter2022-comp421:~/courses/COMP421/p3$ javac GoBabbyApp.java
cwang131@winter2022-comp421:~/courses/COMP421/p3$ export SOCSUSER=cwang131
cwang131@winter2022-comp421:~/courses/COMP421/p3$ export SOCSPASSWD=Wangchuqi0918
cwang131@winter2022-comp421:~/courses/COMP421/p3$ java GoBabbyApp
Please enter your practitioner id [E] to exit:
cwang131
The practitioner id is not valid
Please enter your practitioner id [E] to exit:
█

```

(b)i. Query:

```

--(b)-i:
SELECT name, P.hcid, fid, P.pid, pregnum, finalestimatedate, ppractid,
bpractid, instid
FROM Mother INNER JOIN Parent P on Mother.hcid = P.hcid
INNER JOIN Pregnancy P2 on P.pid = P2.pid
WHERE P.hcid='ZOEJ19990501';

```

```

db2 => SELECT name, P.hcid, fid, P.pid, pregnum, finalestimatedate, ppractid, bpractid, instid
FROM Mother INNER JOIN Parent P on Mother.hcid = P.hcid
INNER JOIN Pregnancy P2 on P.pid = P2.pid
WHERE P.hcid='ZOEJ19990501';db2 (cont.) => db2 (cont.) => db2 (cont.) =>

```

NAME	BPRACTID	HCID	INSTID	FID	PID	PREGNUM	FINALESTIMATEDATE	PPRACTID
Zoe Jia		ZOEJ19990501		rubin375	zoerubin001	2	10/20/2022	asusan472
	mgirard121		4					
Zoe Jia		ZOEJ19990501		rubin375	zoerubin001	1	05/03/2021	oashley188
	cocomia785		3					

```

2 record(s) selected.
db2 => █

```

ii.

```

Please enter your practitioner id [E] to exit:
mgirard121
Please enter the date for appointment list [E] to exit:
█

```

iii.

```

Please enter the date for appointment list [E] to exit:
2022-03-06
1: 13:00:00 P Mixian Chen MIXC19850323
2: 18:20:00 B Zoe Jia ZOEJ19990501

Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date
█

```

iv.

```

Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date
2
For Zoe Jia ZOEJ19990501

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█

```

v.

```
Enter your choice:
1
2022-03-14 10:40:00 Mother need to take more rest
2022-03-11 16:35:00 Couple would prefer birthing center
2022-03-06 19:40:00 Baby has good movements
2021-03-20 12:30:00 Baby and mother are healthy

For Zoe Jia Z0EJ19990501

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█
```

vi.

```
Enter your choice:
2
2022-03-14 [first trimester ultrasound] PENDING
2022-03-01 [blood iron] blood iron is normal
2022-02-08 [first trimester ultrasound] Baby normal growth
2022-01-10 [blood iron] A bit low, recommended supplements
2021-03-20 [first trimester ultrasound] baby is healthy

For Zoe Jia Z0EJ19990501

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█
```

vii.

```
Enter your choice:
3
Please type your observation:
Mother need to take more Vitamin C

For Zoe Jia Z0EJ19990501

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█
```

viii. Query:

```
--(b)-viii:
SELECT obsid, obsdate, obstime, obsnote, Appointment.appid, pregnum,
Parent.pid, fid, hcid
FROM Observation INNER JOIN Appointment
ON Appointment.appid = Observation.appid
INNER JOIN Parent ON Appointment.pid = Parent.pid WHERE
hcid='Z0EJ19990501';
```

db2 => SELECT obsid, obsdate, obstime, obsnote, Appointment.appid, pregnum, Parent.pid, fid, hcid  
FROM Observation INNER JOIN Appointment  
ON Appointment.appid = Observation.appid  
INNER JOIN Parent ON Appointment.pid = Parent.pid WHERE hcid='Z0EJ19990501';db2 (cont.) => db2 (cont.) => db2 (cont.) =>

OBSID	OBSDATE FID	OBSTIME	OBSNOTE	HCID	APPID	PREGNUM	PID
8	03/06/2022	19:40:00	Baby has good movements				
	rubin375			Z0EJ19990501	8	2	zoerubin001
10	03/11/2022	16:35:00	Couple would prefer birthing center				
	rubin375			Z0EJ19990501	10	2	zoerubin001
11	03/14/2022	10:40:00	Mother need to take more rest				
	rubin375			Z0EJ19990501	11	2	zoerubin001
12	03/20/2021	12:30:00	Baby and mother are healthy				
	rubin375			Z0EJ19990501	12	1	zoerubin001
13	03/06/2022	20:29:37	Mother need to take more Vitamin C				
	rubin375			Z0EJ19990501	8	2	zoerubin001

5 record(s) selected.  
db2 => █

ix.

```
Enter your choice:
1
2022-03-14 10:40:00 Mother need to take more rest
2022-03-11 16:35:00 Couple would prefer birthing center
2022-03-06 19:40:00 Baby has good movements
2022-03-06 20:29:37 Mother need to take more Vitamin C
2021-03-20 12:30:00 Baby and mother are healthy

For Zoe Jia Z0EJ19990501

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█
```

x.

```
Enter your choice:
4
Please enter the type of test:
trisomy 21

For Zoe Jia ZOEJ19990501

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█
```

xi. Query:

```
--(b)-xi:
SELECT testid, presdate, testtype, results, practid, pregnum, P.pid, fid
FROM MedicalTest INNER JOIN Parent P on MedicalTest.pid = P.pid
WHERE hcid='ZOEJ19990501';
```

xii.

```
For Zoe Jia ZOEJ19990501

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
5
Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date
█
```

Enter 2 to review if the new test is inserted:

```
Enter your choice:
2
2022-03-14 [first trimester ultrasound] PENDING
2022-03-14 [trisomy 21] PENDING
2022-03-01 [blood iron] blood iron is normal
2022-02-08 [first trimester ultrasound] Baby normal growth
2022-01-10 [blood iron] A bit low, recommended supplements
2021-03-20 [first trimester ultrasound] baby is healthy

For Zoe Jia ZOEJ19990501

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█
```

(c) i. Query:

```
--(c)-i:
SELECT testid, presdate, testtype, results, practid, pregnum, P.pid, fid
FROM MedicalTest INNER JOIN Parent P on MedicalTest.pid = P.pid
WHERE hcid='MIXC19850323';
```

```
db2 => SELECT testid, presdate, testtype, results, practid, pregnum, P.pid, fid
FROM MedicalTest INNER JOIN Parent P on MedicalTest.pid = P.pid
WHERE hcid='MIXC19850323';db2 (cont.) => db2 (cont.) =>

TESTID      PRESDATE    TESTTYPE                                RESULTS                                PRACTID                                PREGNUM    PID                                FID
-----
23          03/11/2022 first trimester ultrasound    result#5                                mgirard121                                2 mixianjames001                                1james
23          02/11/2022 blood iron                    blood iron is normal                    mgirard121                                2 mixianjames001                                1james

2 record(s) selected.

db2 => █
```

ii.

```
Please enter the date for appointment list [E] to exit:
2022-03-06
1: 13:00:00 P Mixian Chen MIXC19850323
2: 18:20:00 B Zoe Jia Z0EJ19990501

Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date
1
For Mixian Chen MIXC19850323

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█
```

iii.

```
Enter your choice:
1
2022-03-06 14:10:00 ObsNote#7
2022-02-22 13:00:00 ObsNote#4

For Mixian Chen MIXC19850323

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█
```

iv.

```
Enter your choice:
4
Please enter the type of test:
Group B streptococcus

For Mixian Chen MIXC19850323

Select an operation
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments

Enter your choice:
█
```

v. Query:

```
--(c)-v:
SELECT testid, presdate, testtype, results, practid, pregnum, P.pid, fid
FROM MedicalTest INNER JOIN Parent P on MedicalTest.pid = P.pid
WHERE hcid='MIXC19850323';
```

```
db2 => SELECT testid, presdate, testtype, results, practid, pregnum, P.pid, fid
FROM MedicalTest INNER JOIN Parent P on MedicalTest.pid = P.pid
WHERE hcid='MIXC19850323';db2 (cont.) => db2 (cont.) =>
```

TESTID	PRESDATE	TESTTYPE	RESULTS	PRACTID	PREGNUM	PID	FID
-----							
23	6 03/11/2022	first trimester ultrasound	result#5	mgirard121	2	mixianjames001	ljames
23	14 02/11/2022	blood iron	blood iron is normal	mgirard121	2	mixianjames001	ljames
23	16 03/14/2022	Group B streptococcus	-	mgirard121	2	mixianjames001	ljames

3 record(s) selected.

db2 => █

(d) i, ii, iii.

```
Enter your choice:
5
Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date
D
Please enter the date for appointment list [E] to exit:
2022-02-21
1: 12:30:00 P Victoria Gutierrez VICG19890327
2: 14:00:00 P Dora Zhang DORZ19970401

Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date
█
```

Indexing:



Q4:

```
--Q4:
CREATE UNIQUE INDEX ind1 ON Mother(addr) INCLUDE(phone);
DROP INDEX ind1;
```

```
db2 => CREATE UNIQUE INDEX ind1 ON Mother(addr) INCLUDE(phone);
DB2000I  The SQL command completed successfully.
db2 => █
```

Data Analytics:

Q5:

```
--Q5:
SELECT MONTH(dob) AS month, COUNT(*) AS numofbirth FROM Baby GROUP BY MONTH(dob);
```

```
db2 => SELECT MONTH(dob) AS month, COUNT(*) AS numofbirth FROM Baby GROUP BY MONTH(dob);

MONTH          NUMOFBIRTH
-----
1              1
3              6
4              7
6              1
7              9
10             5

6 record(s) selected.

db2 => █
```

