

Relation Model

1. AsMother (cID, qhID)
 - cID foreign key ref CoupleInSystem
 - qhID foreign key ref Mother
2. AsSecondParent (cID, fID)
 - cID foreign key ref CoupleInSystem
 - pfID foreign key ref SecondParent
3. Institution (email, name, address, website, phoneNumber)
 - a. Inst_CommunityClinic(email)
 - email foreign key ref Institution
 - b. Inst_BirthingCenter(email)
 - email foreign key ref Institution
4. WorkFor (pID, email)
 - pID foreign key ref Midwife
 - email foreign key ref Institution
 - The system needs to make sure that every midwife is work for one institution.
5. isPregnant(pcID, cID)
 - pcID foreign key ref PregnancyCouple
 - cID foreign key ref CoupleInSystem
6. PregnancyCouple(pcID, ..., placeGiveBirth)
 - Fetus (bID, pcID, sex, name, bloodType, BirthDateandTime)
 - pcID foreign key ref PregnancyCouple
7. Registration (iID, cID, attendance)
 - iID foreign key ref InformationSession
 - cID foreign key ref CoupleInSystem
8. Host (iID, pID)
 - iID foreign key ref InformationSession
 - pID foreign key ref Midwife
9. AssignPrimary (pcID, pID)
 - pcID foreign key ref PregnancyCouple
 - pID foreign key ref Midwife
 - The system needs to make sure that every selected couple is assigned with a midwife.
10. AssignBackup (pcID, pID)
 - pcID foreign key ref PregnancyCouple
 - pID foreign key ref Midwife
 - Since the backup midwife is assigned during the pregnancy process, it is possible that a pregnant couple does not have a backup midwife, but a backup midwife will be assigned before the couple gives birth.
11. SetupAppointment (aID, pcID, pID)
 - aID foreign key ref Appointment
 - pcID foreign key ref CoupleInSyste
 - pID foreign key ref Midwife
12. Appointement (aID, DateAndTime)
 - Note (aID, nTime, content)
 - atID foreign key ref Appointment
13. Prescription (aID, tID)
 - aID foreign key ref Appointment
 - tID foreign key ref MedicalTest
14. ConductBy (tID, techID)
 - tID foreign key ref MedicalTest

- techID foreign key ref LabTechnician
- 15. GiveBirthAtCenter(pcID, email)
 - pcID foreign key ref PregnancyCouple
 - email foreign key ref Inst_BirthingCenter

Application Interaction

(a).

- i. Run a query in the database that shows that midwife with practitioner id P0 does not exist.
practitioner id P0 = 'MW AAAA 0101_1'

```
SELECT * FROM Midwife WHERE pID = 'MW AAAA 0101_1';
```

```
[db2 => connect to db2
SQL1013N  The database alias name or database name "DB2" could not be found.
SQLSTATE=42705
[db2 => connect to cs421

Database Connection Information

Database server      = DB2/LINUXX8664 11.5.4.0
SQL authorization ID = HZHANG20...
Local database alias = CS421

[db2 => SELECT * FROM Midwife WHERE pID = 'MW AAAA 0101_1';

PID          NAME          PHONENUM    MEMAIL
-----
0 record(s) selected.

[db2 => ]
```

- ii. Start the application and enter the practitioner id (of the midwife) P0.

```
[db2 => connect to cs421

Database Connection Information

Database server      = DB2/LINUXX8664 11.5.4.0
SQL authorization ID = HZHANG20...
Local database alias = CS421

[db2 => SELECT * FROM Midwife WHERE pID = 'MW AAAA 0101_1';

PID          NAME          PHONENUM    MEMAIL
-----
0 record(s) selected.

[db2 => quit
DB20000I  The QUIT command completed successfully.
[hzhang203@winter2022-comp421[01:08:38]:~/COMP421/p3$ javac GoBabyApp.java
[hzhang203@winter2022-comp421[01:08:43]:~/COMP421/p3$ java GoBabyApp
hello there~
===== Welcome to GoBaby =====
[Please enter your practitioner id ([E] to exit): MW AAAA 0101_1
INVALID Practitioner id.
[Please enter your practitioner id ([E] to exit): E
===== EXIT =====
hzhang203@winter2022-comp421[01:09:03]:~/COMP421/p3$ ]
```

(b).

mother M₁ : phcID = 'GUTV 0000 1980 0101' name = 'Victoria Gutierrez'
mother M₂ : qhcID = 'POSC 0000 1986 1212' name = 'Cassy Postma'
practitioner id P₁ = 'MW GIRM 0101_1'
date D₁ = '2022-03-21'
date D₂ = '2022-03-22'

i. Run a query in the database that shows that a mother M₁ has had at least two pregnancies (can be as part of the same or different couple - does not matter).

```
SELECT isPregnant.pcID, AsMother.cID, AsMother.qhcID  
FROM isPregnant, AsMother  
WHERE AsMother.qhcID = 'GUTV 0000 1980 0101'  
AND isPregnant.cID = AsMother.cID;
```

```
SELECT count(*) as count  
FROM isPregnant, AsMother  
WHERE AsMother.qhcID = 'GUTV 0000 1980 0101'  
AND isPregnant.cID = AsMother.cID;
```

```
db2 => connect to cs421  
  
Database Connection Information  
  
Database server      = DB2/LINUXX8664 11.5.4.0  
SQL authorization ID = HZHANG20...  
Local database alias = CS421  
  
db2 => SELECT isPregnant.pcID, AsMother.cID, AsMother.qhcID FROM isPregnant, AsMother WHERE AsMother.qhcID = 'GUTV 0000 1980 0101' AND isPregnant.cID = AsMother.cID;  
  
PCID      CID      QHCID  
-----  
VD 2020 C GUTV DAVD GUTV 0000 1980 0101  
VD 2022 C GUTV DAVD GUTV 0000 1980 0101  
  
2 record(s) selected.  
  
db2 => SELECT count(*) as count FROM isPregnant, AsMother WHERE AsMother.qhcID = 'GUTV 0000 1980 0101' AND isPregnant.cID = AsMother.cID;  
  
COUNT  
-----  
2  
1 record(s) selected.
```

pcID, pregnancy couple id → exist 2 different pcID 'VD2020' and 'VD2022'

ii. In the application, enter the practitioner id (of the midwife) P₁ (must exist in the database).

```
hello there~  
===== Welcome to GoBaby =====  
[Please enter your practitioner id ([E] to exit): MW GIRM 0101_1  
  
Hello, MW GIRM 0101_1  
  
Please enter the date(YYYY-MM-DD) for appointment list ([E] to exit):
```

iii. Enter the date D1. One of the appointments must be for M₁ and another one for M₂, a different expecting mother.

```
===== Welcome to GoBaby =====
[Plese enter your practitioner id ([E] to exit): MW GIRM 0101_1
Hello, MW GIRM 0101_1
[Plese enter the date(YYYY-MM-DD) for appointment list ([E] to exit): 2022-03-21
querying appointment for MW GIRM 0101_1 on 2022-03-21
=====
1: 09:00:00 P Victoria Gutierrez GUTV 0000 1980 0101
2: 10:00:00 P Cassy Postma POSC 0000 1986 1212
=====
Enter the appointment number that you would like to work on.
```

iv. Choose the appointment number associated with M₁. → choose 1 here

```
[Plese enter the date(YYYY-MM-DD) for appointment list ([E] to exit): 2022-03-21
querying appointment for MW GIRM 0101_1 on 2022-03-21
=====
1: 09:00:00 P Victoria Gutierrez GUTV 0000 1980 0101
2: 10:00:00 P Cassy Postma POSC 0000 1986 1212
=====
Enter the appointment number that you would like to work on.
[[E] to exit [D] to go back to another date : 1
=====
For Victoria Gutierrez GUTV 0000 1980 0101
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments.
```

v. Enter 1. (Should show at least two notes).

vi. Enter 2. (Should show at least two tests).

```
hello there~  
===== Welcome to GoBaby ======  
[Please enter your practitioner id ([E] to exit): MW GIRM 0101_1  
  
Hello, MW GIRM 0101_1  
  
[Please enter the date(YYYY-MM-DD) for appointment list ([E] to exit): 2022-03-21  
  
Querying appointment for MW GIRM 0101_1 on 2022-03-21  
===== ===== ===== ======  
1: 09:00:00 P Victoria Gutierrez GUTV 0000 1980 0101  
2: 10:00:00 P Cassy Postma POSC 0000 1986 1212  
===== ===== ===== ======  
  
Enter the appointment number that you would like to work on.  
[[E] to exit [D] to go back to another date : 1
```

```
===== ===== ===== =====
```

For Victoria Gutierrez GUTV 0000 1980 0101

Enter 1

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

[Enter your choice: 1

```
2022-03-21 09:30:00 Baby has good movements  
2022-03-21 09:20:00 MEMO: go to park  
2022-03-21 09:10:00 MEMO: drink more water  
===== ===== ===== =====
```

```
===== ===== ===== =====
```

For Victoria Gutierrez GUTV 0000 1980 0101

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

[Enter your choice: 2

Enter 2

```
2022-03-21 [Blood test] iron +  
2022-03-21 [Urine] PENDING  
2022-03-20 [Blood test] iron -  
===== ===== ===== =====
```

```
===== ===== ===== =====
```

For Victoria Gutierrez GUTV 0000 1980 0101

- 1. Review notes
- 2. Review tests

vii. Enter 3. Add a note N1.

```
===== ===== =====  
For Victoria Gutierrez    GUTV 0000 1980 0101
```

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

[Enter your choice: 2

```
2022-03-21 [Blood test] iron +  
2022-03-21 [Urine] PENDING  
2022-03-20 [Blood test] iron -
```

```
===== ===== =====
```

```
For Victoria Gutierrez    GUTV 0000 1980 0101
```

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

Enter 3, add note

[Enter your choice: 3

[Please type your observation: take some lutein :)

```
===== ===== =====
```

```
For Victoria Gutierrez    GUTV 0000 1980 0101
```

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

viii. Run a query in the database that shows all the notes associated with M1, include couple information, pregnancy number, etc., as relevant in your model. The actual note text may be truncated to first 50 characters or so to reduce clutter.

```
SELECT Mother.name as motherName, isPregnant.pclID as pregnancyID, PregnancyCouple.numofPregnancy as numPregnancy,  
SetupAppointment.pID as midwifelD, Note.aID as noteID, Note.content as noteContent  
FROM Mother, AsMother, isPregnant, SetupAppointment, Note, PregnancyCouple  
WHERE Mother.qhclD = AsMother.qhclD AND AsMother.cID = isPregnant.cID  
AND isPregnant.pclID = SetupAppointment.pclID AND SetupAppointment.aID = Note.aID  
AND Mother.qhclD = 'GUTV 0000 1980 0101' AND PregnancyCouple.pclID = isPregnant.pclID;
```

To exit db2 interactive mode, type QUIT at the command prompt. Outside interactive mode, all commands must be prefixed with 'db2'.
To list the current command option settings, type LIST COMMAND OPTIONS.

For more detailed help, refer to the Online Reference Manual.

[db2 => connect to cs421

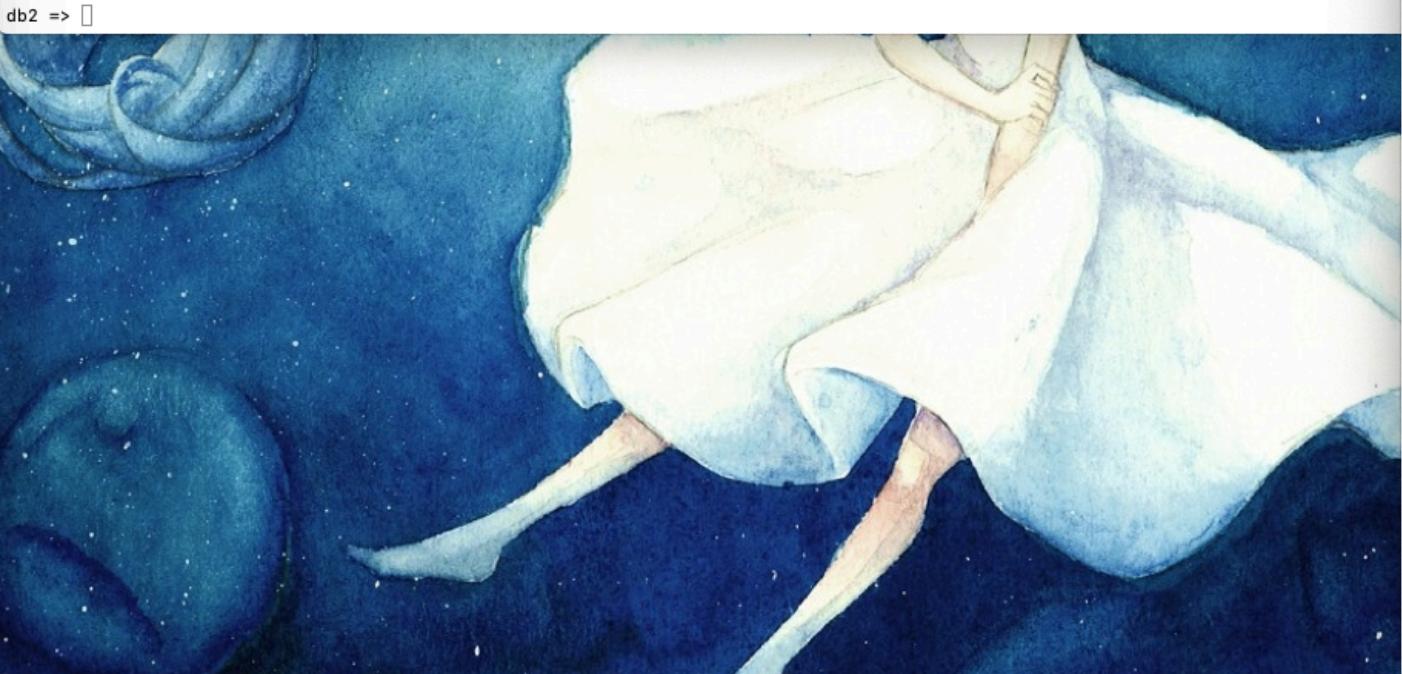
Database Connection Information

Database server = DB2/LINUXX8664 11.5.4.0
SQL authorization ID = HZHANG20...
Local database alias = CS421

db2 => SELECT Mother.name as motherName, isPregnant.pcID as pregnancyID, PregnancyCouple.numofPregnancy as numPregnancy, SetupAppointment.pid as midwifeID, Note.aID as noteID, Note.content as noteContent FROM Mother, AsMother, isPregnant, SetupAppointment, Note, PregnancyCouple WHERE Mother.qhcID = AsMother.qhcID AND AsMother.cID = isPregnant.cID AND isPregnant.pcID = SetupAppointment.pcID AND SetupAppointment.aID = Note.aID AND Mother.qhcID = 'GUTV 0000 1980 0101' AND PregnancyCouple.pcID = isPregnant.pcID;

MOTHERNAME	PREGNANCYID	NUMPREGNANCY	MIDWIFEID	NOTEID	NOTECONTENT
Victoria Gutierrez	VD 2020	1	MW GIRM 0101_1 A 001	they are twins :)	
Victoria Gutierrez	VD 2022	2	MW GIRM 0101_1 A 003	MEMO: drink more water	
Victoria Gutierrez	VD 2022	2	MW GIRM 0101_1 A 003	MEMO: go to park	
Victoria Gutierrez	VD 2022	2	MW GIRM 0101_1 A 003	Baby has good movements	
Victoria Gutierrez	VD 2022	2	MW GIRM 0101_1 A 003	take some lutein :)	

5 record(s) selected.

db2 => 

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

===== ===== =====

For Victoria Gutierrez GUTV 0000 1980 0101

- [1. Review notes
- [2. Review tests
- [3. Add a note
- [4. Prescribe a test
- [5. Go back to the appointments.

Enter your choice: 1

2022-03-21 09:30:00 Baby has good movements
2022-03-21 09:20:00 MEMO: go to park
2022-03-21 09:10:00 MEMO: drink more water

===== ===== =====

For Victoria Gutierrez GUTV 0000 1980 0101

- [1. Review notes
- [2. Review tests
- [3. Add a note
- [4. Prescribe a test
- [5. Go back to the appointments.

Enter your choice: 2

2022-03-21 [Blood test] iron +
2022-03-21 [Urine] PENDING
2022-03-20 [Blood test] iron -

===== ===== =====

For Victoria Gutierrez GUTV 0000 1980 0101

- [1. Review notes
- [2. Review tests
- [3. Add a note
- [4. Prescribe a test
- [5. Go back to the appointments.

Enter your choice: 3

Please type your observation: take some lutein :)

===== ===== =====

For Victoria Gutierrez GUTV 0000 1980 0101

- [1. Review notes
- [2. Review tests
- [3. Add a note
- [4. Prescribe a test
- [5. Go back to the appointments.

Enter your choice:

ix. Enter 1.

===== ===== =====

For Victoria Gutierrez GUTV 0000 1980 0101

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

[Enter your choice: 3

[Please type your observation: take some lutein :)

===== ===== =====

For Victoria Gutierrez GUTV 0000 1980 0101

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

Enter 1

Enter your choice: 1

2022-03-21 09:30:00 Baby has good movements
2022-03-21 09:20:00 MEMO: go to park
2022-03-21 09:10:00 MEMO: drink more water
2022-03-04 03:11:00 take some lutein :)

[===== ===== =====

For Victoria Gutierrez GUTV 0000 1980 0101

- 1. Review notes
- 2. Review tests
- 3. Add a note
- 4. Prescribe a test

x. Enter 4. Add a test for trisomy 21.

```
=====
For Victoria Gutierrez      GUTV 0000 1980 0101

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

Enter your choice: 1

2022-03-21  09:30:00  Baby has good movements
2022-03-21  09:20:00  MEMO: go to park
2022-03-21  09:10:00  MEMO: drink more water
2022-03-04  03:11:00  take some lutein :)

=====

For Victoria Gutierrez      GUTV 0000 1980 0101

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

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

=====

For Victoria Gutierrez      GUTV 0000 1980 0101

1. Review notes
2. Review tests
3. Add a note
```

Enter 4,
Add trisomy 21

xi. Run a query in the database that shows all the tests associated with M1, include couple information, pregnancy number, etc., as relevant in your model. The result attribute of the test maybe truncated to the first 50 characters or so.

```
SELECT Mother.name as motherName, isPregnant.pclID as pregnancyID, PregnancyCouple.numofPregnancy as numPregnancy,
SetupAppointment.pID as midwifeID, Prescription.aID as appointmentID, MedicalTest.tID as testID,
MedicalTest.testType, MedicalTest.result FROM Mother, asMother, isPregnant, SetupAppointment, Prescription, MedicalTest,
PregnancyCouple
WHERE Mother.qhID = AsMother.qhID AND AsMother.cID = isPregnant.cID
AND isPregnant.pclID = SetupAppointment.pclID AND SetupAppointment.aID = Prescription.aID
AND Prescription.tID = MedicalTest.tID AND Mother.qhID = 'GUTV 0000 1980 0101'
AND PregnancyCouple.pclID = isPregnant.pclID;
```

AND Mother.qhcID = 'GUTV 0000 1980 0101' AND PregnancyCouple.pcID = isPregnant.pcID;

MOTHERNAME	PREGNANCYID	NUMPREGNANCY	MIDWIFEID	NOTEID	NOTECONTENT
Victoria Gutierrez	VD 2020	1	MW GIRL 0101_1 A 001		they are twins :)
Victoria Gutierrez	VD 2022	2	MW GIRL 0101_1 A 003		MEMO: drink more water
Victoria Gutierrez	VD 2022	2	MW GIRL 0101_1 A 003		MEMO: go to park
Victoria Gutierrez	VD 2022	2	MW GIRL 0101_1 A 003		Baby has good movements
Victoria Gutierrez	VD 2022	2	MW GIRL 0101_1 A 003		take some lutein :)

5 record(s) selected.

db2 => SELECT Mother.name as motherName, isPregnant.pcID as pregnancyID, PregnancyCouple.numofPregnancy as numPregnancy, SetupAppointment.pID as midwifeID, Prescription.aID as appointmentID, MedicalTest.tID as testID, MedicalTest.testType, MedicalTest.result FROM Mother, isPregnant, SetupAppointment, Prescription, MedicalTest, PregnancyCouple WHERE Mother.qhcID = AsMother.qhcID AND AsMother.cID = isPregnant.cID AND isPregnant.pcID = SetupAppointment.pcID AND SetupAppointment.aID = Prescription.aID AND Prescription.tID = MedicalTest.tID AND Mother.qhcID = GUTV 0000 1980 0101' AND PregnancyCouple.pcID = isPregnant.pcID;

MOTHERNAME	PREGNANCYID	NUMPREGNANCY	MIDWIFEID	APPOINTMENTID	TESTID	TESTTYPE	RESULT
Victoria Gutierrez	VD 2020	1	MW GIRL 0101_1 A 001		T-X W 001	X-ray	-
Victoria Gutierrez	VD 2020	1	MW GIRL 0101_1 A 001		T-B I 001	Blood test	iron --
Victoria Gutierrez	VD 2022	2	MW GIRL 0101_1 A 002		T-B I 002	Blood test	iron -
Victoria Gutierrez	VD 2022	2	MW GIRL 0101_1 A 003		T-B I 003	Blood test	iron +
Victoria Gutierrez	VD 2022	2	MW GIRL 0101_1 A 003		T-U C 002	Urine	-
Victoria Gutierrez	VD 2022	2	MW GIRL 0101_1 A 003		T-T N 001	Trisomy 21	-

6 record(s) selected.

db2 =>

Enter your choice: 2

2022-03-21 [Blood test] iron +
2022-03-21 [Urine] PENDING
2022-03-20 [Blood test] iron -

===== ===== =====
For Victoria Gutierrez GUTV 0000 1980 0101

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

Enter your choice: 3

Please type your observation: take some lutein :)

===== ===== =====
For Victoria Gutierrez GUTV 0000 1980 0101

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

Enter your choice: 1

2022-03-21 09:30:00 Baby has good movements
2022-03-21 09:20:00 MEMO: go to park
2022-03-21 09:10:00 MEMO: drink more water
2022-03-04 03:11:00 take some lutein :)

===== ===== =====
For Victoria Gutierrez GUTV 0000 1980 0101

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

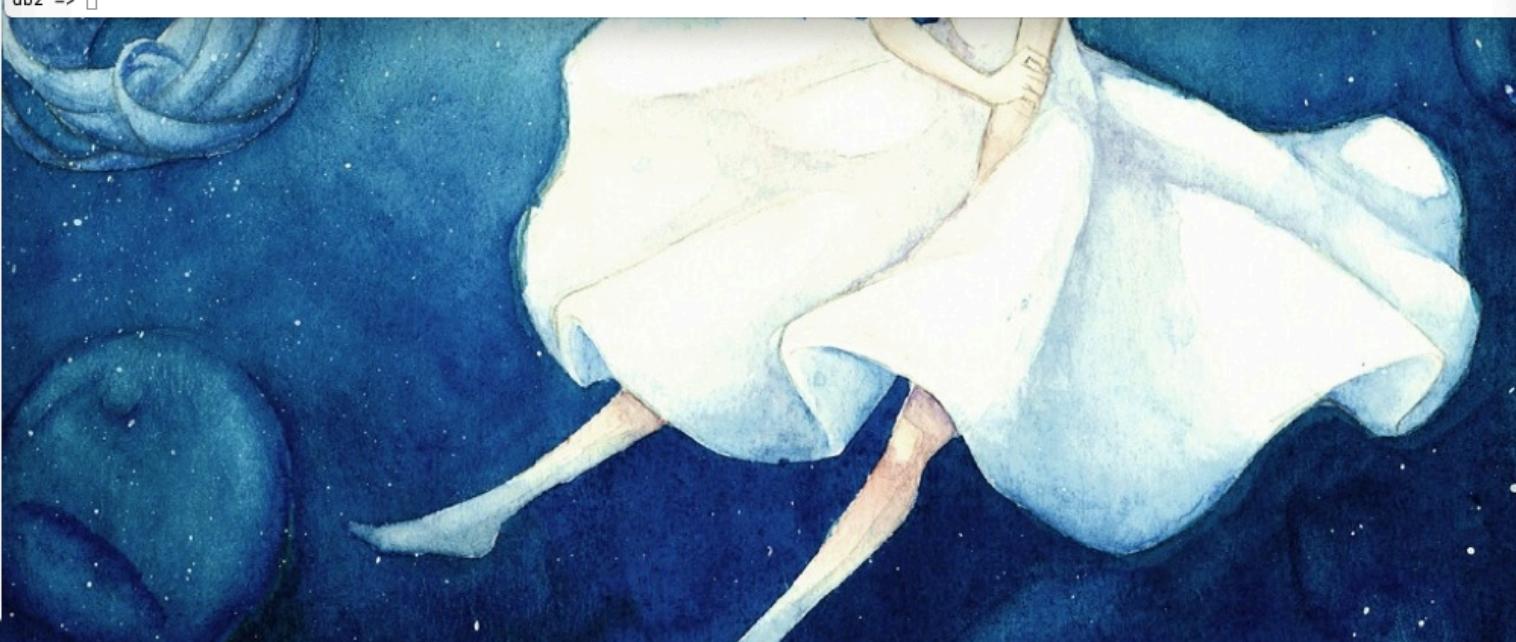
Enter your choice: 4

Please enter the type of test: trisomy 21

===== ===== =====
For Victoria Gutierrez GUTV 0000 1980 0101

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

Enter your choice:



xii. Enter 5

For Victoria Gutierrez GUTV 0000 1980 0101

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

Enter your choice: 4

Please enter the type of test: trisomy 21

=====

For Victoria Gutierrez GUTV 0000 1980 0101

- [
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 5

=====

1: 09:00:00 P Victoria Gutierrez GUTV 0000 1980 0101
2: 10:00:00 P Cassy Postma POSC 0000 1986 1212

=====

Enter the appointment number that you would like to work on.

(c).

i. Run a query in the database that shows all the tests associated with M₂, include couple information, pregnancy number, etc., as relevant in your model. The result attribute of the test maybe truncated to the first 50 characters or so.

```
SELECT Mother.name as motherName, isPregnant.pcID as pregnancyID, PregnancyCouple.numofPregnancy as numPregnancy,  
SetupAppointment.pID as midwifeID, Prescription.aID as appointmentID, MedicalTest.tID as testID, MedicalTest.testType,  
MedicalTest.result FROM Mother, asMother, isPregnant, SetupAppointment, Prescription, MedicalTest, PregnancyCouple  
WHERE Mother.qhclD = AsMother.qhclD AND AsMother.cID = isPregnant.cID  
AND isPregnant.pcID = SetupAppointment.pcID AND SetupAppointment.aID = Prescription.aID  
AND Prescription.tID = MedicalTest.tID AND Mother.qhclD = 'POSC 0000 1986 1212'  
AND PregnancyCouple.pcID = isPregnant.pcID;
```

MOTHERNAME	PREGNANCYID	NUMPREGNANCY	MIDWIFEID	APPOINTMENTID	TESTID	TESTTYPE	RESULT
Cassy Postma	CW 2022	2	MW GIRL 0101_1 A 004	T-B C 001	Blood test		ok

1 record(s) selected.

ii. Choose the appointment associated with mother M2

===== ===== =====

For Victoria Gutierrez GUTV 0000 1980 0101
[
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments.

Enter your choice: 5

===== ===== =====
1: 09:00:00 P Victoria Gutierrez GUTV 0000 1980 0101
2: 10:00:00 P Cassy Postma POSC 0000 1986 1212
[
===== ===== =====

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

===== ===== ===== Choose 2

For Cassy Postma POSC 0000 1986 1212

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

iii. Enter 1 (to see the relevant notes).

```
===== ===== ===== =====  
1: 09:00:00 P Victoria Gutierrez GUTV 0000 1980 0101  
2: 10:00:00 P Cassy Postma POSC 0000 1986 1212  
[
```

```
===== ===== ===== =====  
Enter the appointment number that you would like to work on.  
[E] to exit [D] to go back to another date : 2
```

```
===== ===== ===== =====  
For Cassy Postma POSC 0000 1986 1212
```

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

Enter 1

[Enter your choice: 1

```
2022-03-22 10:04:03 content 4-3.  
2022-03-22 10:04:02 content 4-2.  
2022-03-22 10:04:01 content 4-1.
```

```
===== ===== ===== =====  
For Cassy Postma POSC 0000 1986 1212
```

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

iv. Enter 4. Add a test prescription for Group B streptococcus (test type).

```
For Cassy Postma    POSC 0000 1986 1212
```

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

```
[Enter your choice: 1
```

```
2022-03-22  10:04:03  content 4-3.  
2022-03-22  10:04:02  content 4-2.  
2022-03-22  10:04:01  content 4-1.
```

```
===== ===== =====
```

```
For Cassy Postma    POSC 0000 1986 1212
```

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

Enter 4
Add group B xxxxxxxxx

```
[Enter your choice: 4
```

```
[Please enter the type of test: Group B streptococcus
```

```
===== ===== =====
```

```
For Cassy Postma    POSC 0000 1986 1212
```

1. Review notes
2. Review tests

v. Run a query in the database that shows all the tests associated with M₂, include couple information, pregnancy number, etc., as relevant in your model. The result attribute of the test maybe truncated to the first 50 characters or so.

```
SELECT Mother.name as motherName, isPregnant.pclID as pregnancyID, PregnancyCouple.numofPregnancy as numPregnancy,  
SetupAppointment.pID as midwifeID, Prescription.aID as appointmentID, MedicalTest.tID as testID, MedicalTest.testType,  
MedicalTest.result FROM Mother, asMother, isPregnant, SetupAppointment, Prescription, MedicalTest, PregnancyCouple  
WHERE Mother.qhID = AsMother.qhID AND AsMother.cID = isPregnant.cID  
AND isPregnant.pclID = SetupAppointment.pclID AND SetupAppointment.aID = Prescription.aID  
AND Prescription.tID = MedicalTest.tID AND Mother.qhID = 'POSC 0000 1986 1212'  
AND PregnancyCouple.pclID = isPregnant.pclID;
```

Vicky — ssh hzhang203@winter2022-comp421.cs.mcgill.ca — 143x30

Victoria Gutierrez	VD 2022	2 MW GIRM 0101_1 A 003	T-T N 001	Trisomy 21	-
--------------------	---------	------------------------	-----------	------------	---

6 record(s) selected.

```
db2 => SELECT Mother.name as motherName, isPregnant.pcID as pregnancyID, PregnancyCouple.numofPregnancy as numPregnancy, SetupAppointment.pID as midwifeID, Prescription.aID as appointmentID, MedicalTest.tID as testID, MedicalTest.testType, MedicalTest.result FROM Mother, asMother, isPregnant, SetupAppointment, Prescription, MedicalTest, PregnancyCouple WHERE Mother.qhcID = AsMother.qhcID AND AsMother.cID = isPregnant.cID AND isPregnant.pcID = SetupAppointment.pcID AND SetupAppointment.aID = Prescription.aID AND Prescription.tID = MedicalTest.tID AND Mother.qhcID = 'POSC 0000 1986 1212' AND PregnancyCouple.pcID = isPregnant.pcID;
```

MOTHERNAME	PREGNANCYID	NUMPREGNANCY	MIDWIFEID	APPOINTMENTID	TESTID	TESTTYPE	RESULT
Cassy Postma	CW 2022	2	MW GIRM 0101_1 A 004		T-B C 001	Blood test	ok

1 record(s) selected.

```
db2 => SELECT Mother.name as motherName, isPregnant.pcID as pregnancyID, PregnancyCouple.numofPregnancy as numPregnancy, SetupAppointment.pID as midwifeID, Prescription.aID as appointmentID, MedicalTest.tID as testID, MedicalTest.testType, MedicalTest.result FROM Mother, asMother, isPregnant, SetupAppointment, Prescription, MedicalTest, PregnancyCouple WHERE Mother.qhcID = AsMother.qhcID AND AsMother.cID = isPregnant.cID AND isPregnant.pcID = SetupAppointment.pcID AND SetupAppointment.aID = Prescription.aID AND Prescription.tID = MedicalTest.tID AND Mother.qhcID = 'POSC 0000 1986 1212' AND PregnancyCouple.pcID = isPregnant.pcID;
```

MOTHERNAME	PREGNANCYID	NUMPREGNANCY	MIDWIFEID	APPOINTMENTID	TESTID	TESTTYPE	RESULT
Cassy Postma	CW 2022	2	MW GIRM 0101_1 A 004		T-B C 001	Blood test	ok
Cassy Postma	CW 2022	2	MW GIRM 0101_1 A 004		T-G N 001	Group B streptococcus	-

2 record(s) selected.

db2 =>

Vicky — ssh hzhang203@winter2022-comp421.cs.mcgill.ca — 143x30

For Victoria Gutierrez	GUTV 0000 1980 0101
------------------------	---------------------

- [1. Review notes
- 2. Review tests
- 3. Add a note
- 4. Prescribe a test
- 5. Go back to the appointments.

Enter your choice: 5

```
===== ===== ===== =====
```

1: 09:00:00 P Victoria Gutierrez GUTV
2: 10:00:00 P Cassy Postma POSC 0000 198

```
===== ===== ===== =====
```

Enter the appointment number that you would like to w
[E] to exit [D] to go back to another date : 2

```
===== ===== ===== =====
```

For Cassy Postma POSC 0000 1986 1212

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

Enter your choice: 1

```
2022-03-22 10:04:03 content 4-3.  
2022-03-22 10:04:02 content 4-2.  
2022-03-22 10:04:01 content 4-1.
```

```
===== ===== ===== =====
```

For Cassy Postma POSC 0000 1986 1212

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

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

```
===== ===== ===== =====
```

For Cassy Postma POSC 0000 1986 1212

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

Enter your choice:

(d).

- i. Choose 5, followed by D.
- ii. Enter a different date D2.
- iii. It should show at least two appointments for mothers M₃, M₄, who are not the same as previous example

=====

For Victoria Gutierrez GUTV 0000 1980 0101

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 5

=====

1: 09:00:00 P Victoria Gutierrez GUTV 0000 1980 0101
2: 10:00:00 P Cassy Postma POSC 0000 1986 1212

=====

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

— — D

[Please enter the date(YYYY-MM-DD) for appointment list ([E] to exit): 2022-03-22

— — Different date: 2022-03-22

Querying appointment for MW GIRM 0101_1 on 2022-03-22

=====

1: 08:00:00 P Victoria Gutierrez GUTV 0000 1980 0101
2: 11:00:00 P Xiaopei Hou HOUX 0000 1988 1124
3: 15:00:00 B April Henderson HENA 0000 1987 0726

— — M3 M4

=====

Enter the appointment number that you would like to work on.
[[E] to exit [D] to go back to another date : 3

=====

For April Henderson HENA 0000 1987 0726

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

[Enter your choice: 5

=====

1: 08:00:00 P Victoria Gutierrez GUTV 0000 1980 0101
2: 11:00:00 P Xiaopei Hou HOUX 0000 1988 1124
3: 15:00:00 B April Henderson HENA 0000 1987 0726

=====

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

Indexing

```
CREATE unique INDEX indMom ON Mother(phoneNum) INCLUDE(address);
```

```
db2 => CREATE unique INDEX indMom ON Mother(phoneNum) INCLUDE(address);
DB20000I  The SQL command completed successfully.
db2 => █
```

Data Analytics

Query for table

```
with babies(year,month) as(
  Select YEAR(Fetus.birthDateAndTime) as year, MONTH(Fetus.birthDateAndTime) as month
  FROM Fetus
  WHERE Fetus.birthDateAndTime <= CURRENT_TIMESTAMP
  ORDER BY YEAR(Fetus.birthDateAndTime)

)
SELECT CONCAT(CONCAT(year,'-'),month) as mo, count(*) as cnt
FROM babies
GROUP BY year, month;
```

```
db2 => with babies(year,month) as( Select YEAR(Fetus.birthDateAndTime) as year, MONTH(Fetus.birthDateAndTime) as month FROM Fetus WHERE Fetus.birthDateAndTime <= CURRENT_TIMESTAMP ORDER BY YEAR(Fetus.birthDateAndTime) ) SELECT CONCAT(CONCAT(year,'-'),month) as mo, count(*) as cnt FROM babies GROUP BY year, month;
```

MO	CNT
2017-1	8
2017-2	11
2017-3	6
2017-12	1
2018-12	1
2019-12	1
2020-12	1

7 record(s) selected.

Query for export

```
export to babyCount.xlsx of del
with babies(year,month) as(
  Select YEAR(Fetus.birthDateAndTime) as year, MONTH(Fetus.birthDateAndTime) as month
  FROM Fetus
  WHERE Fetus.birthDateAndTime <= CURRENT_TIMESTAMP
  ORDER BY YEAR(Fetus.birthDateAndTime)

)
SELECT CONCAT(CONCAT(year,'-'),month) as mo, count(*) as cnt
FROM babies
GROUP BY year, month;
```

