

# COMP 421 Project 3

## Relational Model

Note: No changes were made to the relational model from project 2.

1. Parent(hCardID, pname, birthDate, addr, email, phoneNum, profession, btype)
2. Mother(hCardID)
  - hCardID foreign key references Parent
3. Father(fid, hcardID)
  - hCardID foreign key references Parent
4. Couples(coupleID, hCardID, fid)
  - hCardID foreign key references Mother
  - fid foreign key references Father
5. HealthcareInstitution(phoneNum, hciname, addr, email, website)
6. BirthingCenter(phoneNum)
  - phoneNum foreign key references HealthcareInstitution
7. CommunityClinic(phoneNum)
  - phoneNum foreign key references HealthcareInstitution
8. Midwives(practID, mwname, email, phoneNum, workplace)
  - workplace foreign key references HealthcareInstitution
9. LabTechnician(ltID, ltname, phoneNum)
10. Pregnancy(pregID, pregNum, origDueDate, menstrDate, ultrasdDate, fnlDueDate, numBabies, coupleID, ppractID, bpractID, birthLocation)
  - ppractID foreign key references Midwives
  - bpractID foreign key references Midwives
  - coupleID foreign key references Couples
  - birthLocation references HealthcareInstitution
11. Babies(pregID, birthTime, birthDate, bname, btype, homeBirth)
  - pregID foreign key references Pregnancy
12. Tests(testID, ttype, prescribedDate, sampleDate, labWorkDate, result)
13. UpdatesTests(testID, ltID)
  - ltID foreign key references LabTechnician
  - testID foreign key references Tests
14. TestTakenDuring(testID, pregID, baby)
  - testID foreign key references Test
  - pregID foreign key references Pregnancy
  - baby foreign key references Babies
15. MotherTests(testID, practID, mother)
  - testID foreign key references Tests
  - practID foreign key references Midwives
  - mother foreign key references Mother

16. InformationSession(sessID, scheldDate, scheldTime, lang)
17. InformationSessionHosts(sessID, practID)
  - sessID foreign key references InformationSession
  - practID foreign key references Midwives
18. Attends(sessID, coupleID)
  - sessID foreign key references InformationSession
  - coupleID foreign key references Couples
19. Appointments(apptID, heldDate, heldTime, practID, pregnID)
  - pactID foreign key references Midwives
  - pregnID foreign key references Pregnancy
20. Notes(apptID, takenDate, takenTime, observation)
  - apptID foreign key references Appointments

## Application Interaction

a. P0 = 73

i.

```
[db2 => select * from midwives where practID = 73 ]
[db2 (cont.) => ; ]
```

PRACTID	MWNAME	EMAIL	PHONENUM	WORKPLAC
E				
-----				
--				

```
0 record(s) selected.
```

ii.

```
[iepste1@~/p3$ java GoBabbyApp
Please enter your practioner id [E] to exit:
[73
The practioner ID you entered was not found.
Please enter your practioner id [E] to exit:
█
```

b. M1 HCardID = 514

i.

```
db2 => select pregID, pregNum from pregnancy
where coupleID in (select coupleID from couples where hCardID = 514)
[;db2 (cont.) => db2 (cont.) =>
```

PREGID	PREGNUM
5141	1
5142	2

2 record(s) selected.

ii. P1 = 1

```
Please enter your practioner id [E] to exit:
1
Please enter the date for appointment list [E] to exit:
```

iii. D1 = 2022-03-23, M1 = 514, M2 = 519

```
Please enter the date for appointment list [E] to exit:
2022-03-23
1: 10:00:00 B Jemma Fisher 519
2: 13:00:00 P Victoria Gutierrez 514
Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date :
```

iv. M1 is number 2 in the list

```
Please enter the date for appointment list [E] to exit:
2022-03-23
1: 10:00:00 B Jemma Fisher 519
2: 13:00:00 P Victoria Gutierrez 514
Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date :
2
For Victoria Gutierrez 514
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

Enter your choice:
█
```

v.

```
For Victoria Gutierrez 514
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

Enter your choice:
1
2022-03-25 11:06:00 looks like the couple is having some arguments
2022-03-23 13:15:00 felt the baby kick today
```

vi.

```
For Victoria Gutierrez 514
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

Enter your choice:
2
2022-02-06 [blood iron] low
2022-01-31 [blood iron] high
```

vii. N1 = Talked with the mother about what she wanted today

```
For Victoria Gutierrez 514
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

Enter your choice:
3
Please type your observations (no more than 200 characters):
Talked with the mother about what she wanted today
```

viii. Note: I am only including pregID as the relevant information as I made my pregID to incorporate the hCardID of the mother followed by the current pregnancy number. This way, we know what mother we're working with.

```

db2 => select n.observation, pregAppt.pregID from
      (select a.apptID, preg514.pregID from
        (select pregID from pregnancy where coupleID in (select coupleID from couples where hCardID = 514))preg514
        inner join appointments a on a.pregID = preg514.pregID)pregAppt
      inner join notes n on n.apptID = pregAppt.apptID
;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>

```

OBSERVATION	PREGID
everything looks good	5141
couple has brought up no concerns with me	5141
felt the baby kick today	5142
mother felt a little ill, probably ate something bad	5141
looks like the couple is having some arguments	5142
Talked with the mother about what she wanted today	5142

6 record(s) selected.

ix.

For Victoria Gutierrez 514

1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

Enter your choice:

1

2022-03-25 11:06:00 looks like the couple is having some arguments

2022-03-23 13:15:00 felt the baby kick today

2022-03-14 21:27:09 Talked with the mother about what she wanted today

x.



```

For Victoria Gutierrez 514
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

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

```

xi. Note: I am only including pregID as the relevant information as I made my pregID to incorporate the hCardID of the mother followed by the current pregnancy number. This way, we know what mother we're working with.

```

db2 => select t.testID, t.ttype, t.result, tests514.pregID from
(select ttd.testID, preg514.pregID from
(select pregID from pregnancy where coupleID in (select coupleID from couples where hCardID = 514))preg514
inner join testsTakenDuring ttd on ttd.pregID = preg514.pregID)tests514
inner join tests t on t.testID = tests514.testID
;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>

```

TESTID	TTYPE	RESULT	PREGID
101	blood iron	high	5142
104	blood iron	low	5142
106	ultrasound	healthy	5141
2250	trisomy 21	-	5142

```

4 record(s) selected.

```

xii.

```

For Victoria Gutierrez 514
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

Enter your choice:
5
Going back to appointments.
1: 10:00:00 B Jemma Fisher 519
2: 13:00:00 P Victoria Gutierrez 514
Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date :

```

(c)

i. Note: I am only including pregID as the relevant information as I made my pregID to incorporate the hCardID of the mother followed by the current pregnancy number. This way, we know what mother we're working with.

```
db2 => select t.testID, t.ttype, t.result, tests519.pregID from
(select ttd.testID, preg519.pregID from
  (select pregID from pregnancy where coupleID in (select coupleID from couples where hCardID = 519))preg519
  inner join testsTakenDuring ttd on ttd.pregID = preg519.pregID)tests519
  inner join tests t on t.testID = tests519.testID
;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>
```

TESTID	TTYPE	RESULT	PREGID
111	1st trimester ultrasound	everything looks normal	5191
112	blood iron	-	5191

2 record(s) selected.

ii.

```
1: 10:00:00 B Jemma Fisher 519
2: 13:00:00 P Victoria Gutierrez 514
Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date :
1
For Jemma Fisher 519
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

Enter your choice:
```

iii.

```
For Jemma Fisher 519
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

Enter your choice:
1
2022-03-23 10:31:00 had the mother take a blood iron test
2022-03-13 12:15:00 first trimester ultrasound test date, everything l
```

iv.



```
For Jemma Fisher 519
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.
```

```
Enter your choice:
```

```
4
```

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

v. Note: I am only including pregID as the relevant information as I made my pregID to incorporate the hCardID of the mother followed by the current pregnancy number. This way, we know what mother we're working with.

```
db2 => select t.testID, t.ttype, t.result, tests519.pregID from
(select ttd.testID, preg519.pregID from
  (select pregID from pregnancy where coupleID in (select coupleID from couples where hCardID = 519))preg519
  inner join testsTakenDuring ttd on ttd.pregID = preg519.pregID)tests519
  inner join tests t on t.testID = tests519.testID
;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>
```

TESTID	TTYPE	RESULT	PREGID
111	1st trimester ultrasound	everything looks normal	5191
112	blood iron	-	5191
5379	Group B streptococcus	-	5191

```
3 record(s) selected.
```

(d)

i.

```

For Jemma Fisher 519
1. Review Notes
2. Review Tests
3. Add a note
4. Prescribe a test
5. Go back to appointments.

Enter your choice:
5
Going back to appointments.
1: 10:00:00 B Jemma Fisher 519
2: 13:00:00 P Victoria Gutierrez 514
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:

```

ii. D2 = 2022-03-22

```

Please enter the date for appointment list [E] to exit:
2022-03-22
1: 13:25:00 B Sierra Donovan 863
2: 15:00:00 P Elaine Lowery 448
Enter the appointment number that you would like to work on.
[E] to exit [D] to go back to another date :

```

## Indexing

```

db2 => create unique index addrLookUp on parent(phoneNum) include (addr)
;db2 (cont.) =>
DB20000I The SQL command completed successfully.

```

## Data Analytics

```

db2 => select monthname(birthDate) as "Month", count (birthTime) as "Number of Babies" from babies group by monthname(b
irthDate)
;db2 (cont.) =>

Month                                                    Number of Babies
-----
April                                                    5
February                                                 5
November                                                 5
September                                                6

  4 record(s) selected.

db2 => export to babies_per_month.del of del select monthname(birthDate) as "Month", count (birthTime) as "Number of Ba
bies" from babies group by monthname(birthDate);
SQL3104N  The Export utility is beginning to export data to file
"babies_per_month.del".

SQL3105N  The Export utility has finished exporting "4" rows.

Number of rows exported: 4

db2 =>

```

