Mathieu-Joseph Magri   March 15th, 2022
260 928 498   COMP 421

Project, Part 3: Application

Relational Model:

No changes were made to the relational since Project 2.

1. Parent(QcHealthCard, PhoneNumber, Name, BloodType, DateOfBirth, Address, CurrentProfession, Email)

2. BiologicalDad(QcHealthCard, PhoneNumber, Name, BloodType, DateOfBirth, Address, CurrentProfession, Email)

3. BiologicalMom(QcHealthCard, PhoneNumber, Name, BloodType, DateOfBirth, Address, CurrentProfession, Email, TotalNumberOfPreg, CurrentPregNumber)

4. Couple(CoupleID, IsInterestedInProgram, IsInvited, InfoSessionsAttented, ExpectedTimeFrameOfBirth, QcHealthCardMom, QcHealthCardDad, InstName)

QcHealthCardMom foreign key referencing relation BiologicalMom

QcHealthCardDad foreign key referencing relation BiologicalMom

InstName foreign key referencing relation HCInstitution

5. HCInstitution(InstName, PhoneNumber, Email, Address, Website)

6. CommClinic(InstName)

InstName foreign key referencing relation HCInstitute

7. BirthCenter(InstName)

InstName foreign key referencing relation HCInstitute

8. Midwife(PractitionerID, Name, Email, PhoneNumber, InstName)

InstName foreign key referencing relation Institution

9. Backups(PrimaryMidwife, BackupMidwife)

PrimaryMidwife foreign key references relation Midwife

BackupMidwife foreign key references relation Midwife

10. Pregnancy(PregnancyID, PregNum, FinalEstimatedDate, LastMenstruelPDate, UltraSoundDueDate, NumberOfBabies, CoupleID, InstName)

CoupleID foreign key referencing relation Couple

InstName foreign key referencing HCInstitution

LocationOfBirth foreign key referencing BirthCenter (Also the location of birth)

11. Baby(<u>BabyID</u>, Gender, Name, HealthStatus, BloodType, DateOfBirth, TimeOfBirth, PregnancyID)

PregnancyID foreign key referencing relation Pregnancy

12. Supervises(<u>PractitionerID, PregnancyID</u>)

PractitionerID foreign key referencing relation Midwife

PregnancyID foreign key referencing Pregnancy

13. Attends(<u>CoupleID, PractitionnerID, Date, Time</u>, HasAttended, IsRegistered)

CoupleID foreign key referencing relation Couple,

(PractitionnerID, Date, Time) foreign key referencing OnlineInfoSession

14. OnlineInfoSession(<u>PractitionerID, Date, Time</u>, Language, CouplesAttendance)

PractitionerID foreign key referencing relation Midwife

15. Appointment(<u>AppointmentID</u>, Date, Time, PractitionerID, PregnancyID)

PractitionerID foreign key referencing relation Midwife

PregnancyID foreign key referencing relation Pregnancy

16. Note(<u>AppointmentID, Date, Time</u>, Observation)

AppointmentID foreign key referencing relation Appointment

17. Technician(<u>TechnicianID</u>, Name, PhoneNumber)

18. Lab(<u>LabName</u>, NumberOfTests, LabAddress)

19. MedicalTest(<u>TestID</u>, TestResult, TestType, DateLabWorkWasDone, DateTestWasPrescribed, DateSampleWasTaken, RecipientOfTest, TechnicianID, LabName, PractitionerID, BabyID, PregancyID)

TechnicianID foreign key referencing relation Technician

LabName foreign key referencing relation Lab

PractitionerID foreign key referencing relation Midwife

BabyID foreign key referencing relation Baby

PregnancyID foreign key referencing relation Pregnancy

Restrictions and assumptions are not included given that it was not necessary to do so.

Application Interaction:

Values used in the questions:
$P_0 = 27$, M_1 = Victoria Gutierrez, M_2 = Jeanne Lalonde, $P_1 = 0$, D_1 = 2022-03-24, N_1 = Pregnancy on track, D_2 = 2022-03-21, M_3 = Nora Sarim , M_4 = Alli Pitlick

Question 3:

a)

i)

```
db2 => SELECT *
FROM Midwife
WHERE Midwife.PractitionerID = 27
[;db2 (cont.) => db2 (cont.) => db2 (cont.) =>

PRACTITIONERID NAME                                              EMAIL                                        PHONENUMBER INSTNAME
-------------- ------------------------------------------------  -------------------------------------------  ----------- ---------------------------------------------

  0 record(s) selected.

db2 =>
```

ii)

```
[mmagri1@winter2022-comp421:~/Projects/COMP421/P3$ java GoBabbyApp
Welcome to the GoBabbyApp!
Please enter your practitioner id [E] to exit:
[27
Search is finished, PractitionerID was not found.
As mentioned previously, practitioner ID was not found.
Try again.
Please enter your practitioner id [E] to exit:
```

b)

i)

```
db2 => SELECT BiologicalMom.Name, Pregnancy.PregnancyID, Couple.CoupleID
FROM BiologicalMom, Couple, Pregnancy
WHERE BiologicalMom.Name = 'Victoria Gutierrez' AND BiologicalMom.QcHealthCard = Couple.QcHealthCardMom AND Couple.CoupleID = Pregnancy.CoupleID
[;db2 (cont.) => db2 (cont.) => db2 (cont.) =>

NAME                                              PREGNANCYID COUPLEID
------------------------------------------------- ----------- ----------
Victoria Gutierrez                                          5          7
Victoria Gutierrez                                          6          7

  2 record(s) selected.

db2 =>
```

ii)

```
Please enter your practitioner id [E] to exit:
0
practitionerID:  0
PractitionerID Found!
Please enter the date for an appointment list [E] to exit:
█
```

iii)

```
Please enter your practitioner id [E] to exit:
0
practitionerID:  0
PractitionerID Found!
Please enter the date for an appointment list [E] to exit:
[2022-03-24
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
█
```

(Some mothers have two or more appointments in the same day, this was done for testing
purposes only.)

iv)

```
Please enter your practitioner id [E] to exit:
0
practitionerID:  0
PractitionerID Found!
Please enter the date for an appointment list [E] to exit:
[2022-03-24
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
3
For Victoria Gutierrez GUTV10001000

1. Review Notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to appointments
Enter your choice of action:
```

v)

```
Please enter your practitioner id [E] to exit:
0
practitionerID:  0
PractitionerID Found!
Please enter the date for an appointment list [E] to exit:
[2022-03-24
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
3
For Victoria Gutierrez GUTV10001000

1. Review Notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to appointments
Enter your choice of action:
1
Reviewing notes:
2022-03-24 20:11:42 Blood levels are normal.
2022-03-24 11:20:35 Pregnancy healthy. All is fine.
2022-03-24 11:10:05 Pregnancy is on track. Looking good.
2022-03-24 11:00:00 Discussed previous 3 blood sample tests. Looking g
2022-03-14 19:51:07 Mother and Baby are fine.
Enter your choice of action:
```

vi)

```
Please enter your practitioner id [E] to exit:
0
practitionerID:  0
PractitionerID Found!
Please enter the date for an appointment list [E] to exit:
2022-03-24
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
3
For Victoria Gutierrez GUTV10001000

1. Review Notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to appointments
Enter your choice of action:
1
Reviewing notes:
2022-03-24 20:11:42 Blood levels are normal.
2022-03-24 11:20:35 Pregnancy healthy. All is fine.
2022-03-24 11:10:05 Pregnancy is on track. Looking good.
2022-03-24 11:00:00 Discussed previous 3 blood sample tests. Looking g
2022-03-14 19:51:07 Mother and Baby are fine.
Enter your choice of action:
2
Reviewing tests:
2021-12-16 [Blood Iron] Abnormal.
2021-09-13 [Blood Iron] Normal.
2021-05-20 [Blood Iron] Better.
Enter your choice of action:
```

vii)

```
Please enter your practitioner id [E] to exit:
0
practitionerID:  0
PractitionerID Found!
Please enter the date for an appointment list [E] to exit:
2022-03-24
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
3
For Victoria Gutierrez GUTV10001000

1. Review Notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to appointments
Enter your choice of action:
1
Reviewing notes:
2022-03-24 20:11:42 Blood levels are normal.
2022-03-24 11:20:35 Pregnancy healthy. All is fine.
2022-03-24 11:10:05 Pregnancy is on track. Looking good.
2022-03-24 11:00:00 Discussed previous 3 blood sample tests. Looking g
2022-03-14 19:51:07 Mother and Baby are fine.
Enter your choice of action:
2
Reviewing tests:
2021-12-16 [Blood Iron] Abnormal.
2021-09-13 [Blood Iron] Normal.
2021-05-20 [Blood Iron] Better.
Enter your choice of action:
3
Adding a note, please type your observation:
Pregnancy on track.
Note added.
Enter your choice of action:
```

viii)

```
db2 => SELECT BiologicalMom.Name, Pregnancy.PregnancyID, Pregnancy.PregNum, Couple.CoupleID, Appointment.AppointmentID, LEFT(Note.Observation, 50) as Observation, Note.Date, Note.Time
FROM BiologicalMom, Couple, Pregnancy, Appointment, Note
WHERE BiologicalMom.Name = 'Victoria Gutierrez' AND BiologicalMom.QcHealthCard = Couple.QcHealthCardMom AND Couple.CoupleID = Pregnancy.CoupleID AND Pregnancy.PregnancyID = Appointment.PregnancyID
AND Appointment.AppointmentID = Note.AppointmentID
[;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>

NAME                                    PREGNANCYID PREGNUM    COUPLEID    APPOINTMENTID OBSERVATION
                                                                                                                                           DATE       TIME
--------------------------------------- ----------- ---------- ----------- ------------- --------------------------------------------------- ---------- --------
Victoria Gutierrez                                5          1           7             5 Ultrasound to be done soon. Sample for blood iron
                                                                                                                                           03/23/2021 15:30:00
Victoria Gutierrez                                6          2           7             9 Discussed previous 3 blood sample tests. Looking g
                                                                                                                                           03/24/2022 11:00:00
Victoria Gutierrez                                6          2           7             9 Pregnancy is on track. Looking good.
                                                                                                                                           03/24/2022 11:10:05
Victoria Gutierrez                                6          2           7            18 Pregnancy healthy. All is fine.
                                                                                                                                           03/24/2022 11:20:35
Victoria Gutierrez                                6          2           7            18 Blood levels are normal.
                                                                                                                                           03/24/2022 20:11:42
Victoria Gutierrez                                6          2           7            19 Mother and Baby are fine.
                                                                                                                                           03/14/2022 19:51:07
Victoria Gutierrez                                6          2           7             9 Pregnancy on track.
                                                                                                                                           03/14/2022 19:30:41

  7 record(s) selected.

db2 =>
```

The last entry is the added note: "Pregnancy on track."

ix)

```
For Victoria Gutierrez GUTV10001000

1. Review Notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to appointments
Enter your choice of action:
1
Reviewing notes:
2022-03-24 20:11:42 Blood levels are normal.
2022-03-24 11:20:35 Pregnancy healthy. All is fine.
2022-03-24 11:10:05 Pregnancy is on track. Looking good.
2022-03-24 11:00:00 Discussed previous 3 blood sample tests. Looking g
2022-03-14 19:51:07 Mother and Baby are fine.
Enter your choice of action:
2
Reviewing tests:
2021-12-16 [Blood Iron] Abnormal.
2021-09-13 [Blood Iron] Normal.
2021-05-20 [Blood Iron] Better.
Enter your choice of action:
3
Adding a note, please type your observation:
Pregnancy on track.
Note added.
Enter your choice of action:
1
Reviewing notes:
2022-03-24 20:11:42 Blood levels are normal.
2022-03-24 11:20:35 Pregnancy healthy. All is fine.
2022-03-24 11:10:05 Pregnancy is on track. Looking good.
2022-03-24 11:00:00 Discussed previous 3 blood sample tests. Looking g
2022-03-14 19:51:07 Mother and Baby are fine.
2022-03-14 19:30:41 Pregnancy on track.
Enter your choice of action:
```

x)

```
For Victoria Gutierrez GUTV10001000

1. Review Notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to appointments
Enter your choice of action:
1
Reviewing notes:
2022-03-24 20:11:42 Blood levels are normal.
2022-03-24 11:20:35 Pregnancy healthy. All is fine.
2022-03-24 11:10:05 Pregnancy is on track. Looking good.
2022-03-24 11:00:00 Discussed previous 3 blood sample tests. Looking g
2022-03-14 19:51:07 Mother and Baby are fine.
Enter your choice of action:
2
Reviewing tests:
2021-12-16 [Blood Iron] Abnormal.
2021-09-13 [Blood Iron] Normal.
2021-05-20 [Blood Iron] Better.
Enter your choice of action:
3
Adding a note, please type your observation:
Pregnancy on track.
Note added.
Enter your choice of action:
1
Reviewing notes:
2022-03-24 20:11:42 Blood levels are normal.
2022-03-24 11:20:35 Pregnancy healthy. All is fine.
2022-03-24 11:10:05 Pregnancy is on track. Looking good.
2022-03-24 11:00:00 Discussed previous 3 blood sample tests. Looking g
2022-03-14 19:51:07 Mother and Baby are fine.
2022-03-14 19:30:41 Pregnancy on track.
Enter your choice of action:
4
Prescribing a test, please enter the type of test:
Trisomy21
Prescription added.
Enter your choice of action:
```

xi)

```
db2 => SELECT BiologicalMom.Name, Pregnancy.PregnancyID as PregID, Pregnancy.PregNum, Couple.CoupleID as CouID, MedicalTests.TestID as TID, MedicalTests.TestResult as Result, MedicalTests.TestType as Type
, MedicalTests.DateLabWorkWasDone as LabWork, MedicalTests.DateTestWasPrescribed as Prescription, MedicalTests.DateSampleWasTaken as Sample, MedicalTests.TechnicianID as TechID, MedicalTests.LabName,
MedicalTests.PractitionerID as PractID, MedicalTests.BabyID
FROM BiologicalMom, Couple, Pregnancy, MedicalTests
WHERE BiologicalMom.Name = 'Victoria Gutierrez' AND BiologicalMom.QcHealthCard = Couple.QcHealthCardMom AND Couple.CoupleID = Pregnancy.CoupleID AND Pregnancy.PregnancyID = MedicalTests.PregnancyID
;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>
```

NAME	PRACTID	BABYID	PREGID	PREGNUM	COUID	TID	RESULT	TYPE	LABWORK	PRESCRIPTION	SAMPLE	TECHID	LABNAME
Victoria Gutierrez	10	7	5	1	7	7	Success.	Ultrasound	03/30/2021	03/24/2021	03/23/2021	4	Centre dAnalyse du Québec
Victoria Gutierrez	10	9	6	2	7	8	Normal.	Blood Iron	09/20/2021	09/13/2021	03/23/2021	4	Centre dAnalyse du Québec
Victoria Gutierrez	10	9	6	2	7	9	Abnormal.	Blood Iron	12/23/2021	12/16/2021	03/23/2021	4	Centre dAnalyse du Québec
Victoria Gutierrez	10	9	6	2	7	10	Better.	Blood Iron	05/27/2022	05/20/2021	03/23/2021	4	Centre dAnalyse du Québec
Victoria Gutierrez	0	-	6	2	7	13	PENDING	Trisomy21	-	03/14/2022	-	0	Montreal Lab Center

```
  5 record(s) selected.

db2 =>
```

The last entry, where Result is pending, was the entry made.

xii)

```
Adding a note, please type your observation:
[Pregnancy on track.
Note added.
Enter your choice of action:
1
Reviewing notes:
2022-03-24 20:11:42 Blood levels are normal.
2022-03-24 11:20:35 Pregnancy healthy. All is fine.
2022-03-24 11:10:05 Pregnancy is on track. Looking good.
2022-03-24 11:00:00 Discussed previous 3 blood sample tests. Looking g
2022-03-14 19:51:07 Mother and Baby are fine.
2022-03-14 19:30:41 Pregnancy on track.
Enter your choice of action:
4
Prescribing a test, please enter the type of test:
[Trisomy21
Prescription added.
Enter your choice of action:
5
Going back to the appointments menu.
Heading back to the appointments menu.
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
```

c)

i)

```
db2 => SELECT BiologicalMom.Name, Pregnancy.PregnancyID as PregID, Pregnancy.PregNum, Couple.CoupleID as CouID, MedicalTests.TestID as TID, MedicalTests.TestResult as Result, MedicalTests.TestType as Type
, MedicalTests.DateLabWorkWasDone as LabWork, MedicalTests.DateTestWasPrescribed as Prescription, MedicalTests.DateSampleWasTaken as Sample, MedicalTests.TechnicianID as TechID, MedicalTests.LabName,
MedicalTests.PractitionerID as PractID, MedicalTests.BabyID
FROM BiologicalMom, Couple, Pregnancy, MedicalTests
WHERE BiologicalMom.Name = 'Jeanne Lalonde' AND BiologicalMom.QcHealthCard = Couple.QcHealthCardMom AND Couple.CoupleID = Pregnancy.CoupleID AND Pregnancy.PregnancyID = MedicalTests.PregnancyID
[;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>
```

NAME	PRACTID	BABYID	PREGID	PREGNUM	COUID	TID	RESULT	TYPE	LABWORK	PRESCRIPTION	SAMPLE	TECHID	LABNAME
Jeanne Lalonde			0	3	0	0 Success.	Ultrasound	03/13/2021	03/04/2021	03/03/2021		0	Institut de Médecine de Montréal
	0	0											
Jeanne Lalonde			0	3	0	1 Success.	Ultrasound	03/13/2021	03/04/2021	03/03/2021		0	Institut de Médecine de Montréal
	1	0											

```
  2 record(s) selected.

db2 =>
```

ii)

```
Prescribing a test, please enter the type of test:
[Trisomy21
Prescription added.
Enter your choice of action:
5
Going back to the appointments menu.
Heading back to the appointments menu.
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
1
For Jeanne Lalonde LALJ12345678

1. Review Notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to appointments
Enter your choice of action:
█
```

iii)

```
Going back to the appointments menu.
Heading back to the appointments menu.
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
1
For Jeanne Lalonde LALJ12345678

1. Review Notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to appointments
Enter your choice of action:
1
Reviewing notes:
2020-05-03 09:30:00 Everything is fine. US appointment planned.
Enter your choice of action:
█
```

iv)

For this next step, we will add test type "GroupBstr" given that, to avoid clutter, when I made my database, I put a maximum of 10 characters for the test type. Therefore, "GroupBstr" is meant to replace "Group B streptococcus".

```
Going back to the appointments menu.
Heading back to the appointments menu.
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
       [E] to exit [D] to go back to another date:
1
For Jeanne Lalonde LALJ12345678

1. Review Notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to appointments
Enter your choice of action:
1
Reviewing notes:
2020-05-03 09:30:00 Everything is fine. US appointment planned.
Enter your choice of action:
4
Prescribing a test, please enter the type of test:
GroupBstr
Prescription added.
Enter your choice of action:
```

v)

```
db2 => SELECT BiologicalMom.Name, Pregnancy.PregnancyID as PregID, Pregnancy.PregNum, Couple.CoupleID as CouID, MedicalTests.TestID as TID, MedicalTests.TestResult as Result, MedicalTests.TestType as Type
, MedicalTests.DateLabWorkWasDone as LabWork, MedicalTests.DateTestWasPrescribed as Prescription, MedicalTests.DateSampleWasTaken as Sample, MedicalTests.TechnicianID as TechID, MedicalTests.LabName,
MedicalTests.PractitionerID as PractID, MedicalTests.BabyID
FROM BiologicalMom, Couple, Pregnancy, MedicalTests
WHERE BiologicalMom.Name = 'Jeanne Lalonde' AND BiologicalMom.QcHealthCard = Couple.QcHealthCardMom AND Couple.CoupleID = Pregnancy.CoupleID AND Pregnancy.PregnancyID = MedicalTests.PregnancyID
;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>
```

| NAME | PREGID | PREGNUM | COUID | TID | RESULT | TYPE | LABWORK | PRESCRIPTION | SAMPLE | TECHID | LABNAME |
	PRACTID	BABYID									
Jeanne Lalonde	0	3	0	0	Success.	Ultrasound	03/13/2021	03/04/2021	03/03/2021	0	Institut de Médecine de Montréal
	0	0									
Jeanne Lalonde	0	3	0	1	Success.	Ultrasound	03/13/2021	03/04/2021	03/03/2021	0	Institut de Médecine de Montréal
	1	0									
Jeanne Lalonde	0	3	0	14	PENDING	GroupBstr	-	03/14/2022	-	3	Montreal Lab Center
	0	-									

```
 3 record(s) selected.

db2 =>
```

The last record is the one we added.

d)

i)

```
Reviewing notes:
2020-05-03 09:30:00 Everything is fine. US appointment planned.
Enter your choice of action:
4
Prescribing a test, please enter the type of test:
[GroupBstr
Prescription added.
Enter your choice of action:
5
Going back to the appointments menu.
Heading back to the appointments menu.
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
D
Heading back to date search
Please enter the date for an appointment list [E] to exit:
▋
```

ii) AND iii)

```
Enter your choice of action:
5
Going back to the appointments menu.
Heading back to the appointments menu.
1: 08:30:00 P Jeanne Lalonde LALJ12345678
2: 09:00:00 B Nora Sarim SARN76678778
3: 11:00:00 B Victoria Gutierrez GUTV10001000
4: 12:30:00 P Jeanne Lalonde LALJ12345678
5: 17:30:00 B Victoria Gutierrez GUTV10001000
6: 18:30:00 B Jessy McCollough MCCJ45612334
7: 19:30:00 P Victoria Gutierrez GUTV10001000
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
D
Heading back to date search
Please enter the date for an appointment list [E] to exit:
[2022-03-21
1: 09:00:00 B Nora Sarim SARN76678778
2: 10:00:00 P Victoria Gutierrez GUTV10001000
3: 17:00:00 P Alli Pitlick PITA45677654
Search is finished.
Enter the appointment number that you would like to work on.
        [E] to exit [D] to go back to another date:
▋
```

Indexing:

```
db2 => CREATE INDEX phoneNumInd ON BiologicalMom(PhoneNumber, Address)
[;db2 (cont.) =>
DB20000I  The SQL command completed successfully.
db2 =>
```

IMPORTANT NOTE: At first, I used this command to create an index:

CREATE INDEX phoneNumIndV2 ON BiologicalMom(PhoneNumber)
;

However, when running it, I got this error:

```
db2 => CREATE INDEX phoneNumIndV2 ON BiologicalMom(PhoneNumber)
[;db2 (cont.) =>
SQL0605W  The index was not created because an index
"SYSIBM.SQL220314203134840" with a matching definition already exists.
SQLSTATE=01550
db2 =>
```

I decided not to delete an automatically generated index from the system, as I did not feel comfortable doing so. Therefore, I created an index with both PhoneNumber and Address instead, even if the index should just be on PhoneNumber.

Data Analytics:

Query used to gather the data:

SELECT MONTH(Baby.DateOfBirth) as Month, COUNT(*) as TotalAllTimeBirths
FROM Baby
WHERE Baby.DateOfBirth <= '2022-03-15'
GROUP BY MONTH(Baby.DateOfBirth)
;

```
db2 => SELECT MONTH(Baby.DateOfBirth) as Month, COUNT(*) as TotalAllTimeBirths
FROM Baby
WHERE Baby.DateOfBirth <= '2022-03-15'
GROUP BY  MONTH(Baby.DateOfBirth)
[;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>

MONTH        TOTALALLTIMEBIRTHS
----------- ------------------
          2                  1
          4                  5
          5                  5
          8                  1
         11                  6
         12                  4

  6 record(s) selected.

db2 =>
```

	Month	TotalAllTimeBirths
1	Month	TotalAllTimeBirths
2	January	0
3	February	1
4	March	0
5	April	5
6	May	5
7	June	0
8	July	0
9	August	1
10	September	0
11	October	0
12	November	6
13	December	4