

Project3

Relational Model

Midwife(practitioner id, hemail, phone number, name, email)

- Foreign key hemail references Health Institution. Not null.

MainMidwife(pregnancy id, practitioner id)

- Foreign key pregnancy id references Pregnancy.
- Foreign key practitioner id references Midwife.
- Note: participation constraint can't be enforced.

BackupMidwife(pregnancy id, practitioner id)

- Foreign key pregnancy id references Pregnancy.
- Foreign key practitioner id references Midwife.
- Note: participation constraint can't be enforced.

Health Institution(email, address, phonenum, name, website)

Clinic(email)

- Foreign key email references Health Institution

BirthingCenters(email)

- Foreign key email references Health Institution (2)

Father (RAMQ id, blood type, phone number, current profession, email, birthday, address, name)

Mother(RAMQ id, blood type, phone number, current profession, email, birthday, address, name)

CoupleMother(RAMQ id, couple id)

- Foreign key RAMQ id references Mother
- Foreign key couple id references Couple
- Note: participation constraint can't be enforced.

CoupleFather(RAMQ id, couple id)

- Foreign key RAMQ id references Father
- Foreign key couple id references Couple

Couple(couple id, motherRAMQId)

- Foreign key motherRAMQId references Mother

OnlineInfoSessionAttendance(couple id, session id)

- Foreign key couple id references Couple
- Foreign key session id references Online Info Session.

Pregnancy(pregnancy id, couple id, last menstrual period due date, ultrasound due date, bcemail, birthloc, expected due date)

- Foreign key couple id references Couple. Not Null.
- Foreign key bcemail references BirthingCenter.

Online Info Session(session id, midwifePracId, language, date, time)

- Foreign key midwifePracId references Midwife. Not Null.

Appointment(appointment id, midwifePracId, pregnancy id, date, time)

- Foreign key pregnancy id references Pregnancy. Not Null.
- Foreign key midwifePracId references Midwife. Not Null.

Observation notes(note id, appointment id, date, time, note)

- Foreign key appointment id references Appointment. Not Null.

Medical test(test id, appointment id, forBaby, individualID, prescribed date, sampled date, location, lab date, test result, test type)

- Foreign key appointment id references Appointment. Not Null.

Technician(techid, name, phone number)

TechnicianInCharge(techid, test id)

- Foreign key techid references Technician NOT NULL
- Foreign key test id references Medical Test NOT NULL
- Note: participation constraint can't be enforced.

Baby(baby id, pregnancy id, gender, blood type, date of birth, name)

- Foreign key pregnancy id references Pregnancy. Not Null.

Application Interaction

a)
i.

```
swang298@winter2022-comp421:~/COMP421/p3$ db2 "SELECT * FROM MIDWIFE WHERE PRACTITIONERID=999"
PRACTITIONERID HEMAIL                                NAME          PHONENUM          EMAIL
-----
8 record(s) selected.
swang298@winter2022-comp421:~/COMP421/p3$
```

ii

```
swang298@winter2022-comp421:~/COMP421/p3$ java GoBabyApp
Please enter your practitioner id [E] to exit: 999
Practitioner id 999 is not valid
Please enter your practitioner id [E] to exit: 
```

b)
i

```

swang298@winter2022-comp421:~/COMP421/p3$ db2 *SELECT * FROM PREGNANCY WHERE coupleID IN (SELECT coupleID FROM COUPLE WHERE motherramqid = 1)*
PREGNANCYID COUPLEID MIDWIFEID LASTMENPERIODD ULTRASOUNDD BEMAIL
----- EXPECTEDDD -----
1e Avenue      6       6   03/30/2021    02/11/2022  ciordi2@nba.com
23            6       10 -          -          -          04/26/2021
                                         -          01/01/2022

2 record(s) selected.

swang298@winter2022-comp421:~/COMP421/p3$ 

```

ii

```

swang298@winter2022-comp421:~/COMP421/p3$ java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 

```

iii

swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.9 P Millicent 4
2: 2021-11-16 22:00:00.9 B Prue 12
Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :|

iv

swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.9 P Millicent 4
2: 2021-11-16 22:00:00.9 B Prue 12
Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
Enter your choice:|

v

```
swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice:1
2022-03-08 14:42:13.0 Random note
2021-05-29 22:36:19.0 Random note
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
Enter your choice:1

```

vi

```
swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice:1
2022-03-08 14:42:13.0 Random note
2021-05-29 22:36:19.0 Random note
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice:2
2022-03-08 [Complete Blood Count] null
2021-05-29 [Blood Iron] A bit low, recommended supplements
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
Enter your choice:2

```

vii

```

swang298@winter2022-comp421:~/COMP421/p3$ java GoBabyApp
Please enter your appointmentID oritioner id [E] to exit 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:34:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice: 1
2022-03-09 11:42:14.0: Random note
2021-05-29 22:36:19.0: Random note
For Prue 12
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice: 2
2021-11-29 [Blood iron] null
2021-11-29 [Blood iron] A bit low, recommended supplements
For Millicent 4
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: Another Random Note
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice: 4

```

viii

```

swang298@winter2022-comp421:~/COMP421/p3$ db2 "SELECT * FROM OBSERVATIONNOTE WHERE appointmentID IN (SELECT appointmentID FROM APPOINTMENT WHERE pregnancyID IN (SELECT pregnancyID FROM PREGNANCY WHERE coupleID IN (SELECT coupleID FROM COUPLE WHERE motherID = 4)))"
NOTEID      APPOINTMENTID NOTETIME          NOTE
-----      -----  -----  -----
1           1 2021-05-29-22.36.19.000000 Random note
2           2 2022-02-15-19.35.18.000000 Random note
8           8 2021-06-12-12.46.24.000000 Random note
11          1 2022-03-09-11.42.14.000000 Random note
12          1 2022-03-09-11.43.55.000000 Another Random Note
5 record(s) selected.

swang298@winter2022-comp421:~/COMP421/p3$ 

```

ix

```
swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice: 1
2022-03-09 11:43:58.0: Another Random Note
2022-03-09 11:42:14.0: Random note
2021-11-16 21:36:19.0: Random note
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
Enter your choice: ■
```

X

```
swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice: 1
2022-03-09 11:43:58.0: Another Random Note
2022-03-09 11:42:14.0: Random note
2021-11-16 21:36:19.0: Random note
For Millicent 4
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 type of test: trisomy 21
For Millicent 4
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
Enter your choice: ■
```

```

swang298@winter2022-comp421:~$ db2 "SELECT * FROM MEDICALTEST WHERE FORBABY = FALSE AND INDIVIDUALID = 4"
TESTID      APPOINTMENTID FORBABY INDIVIDUALID PRESCRIBEDDATE SAMPLEDDATE LOCATION          TESTTYPE
ABDATE      TESTRESULT

-----
17/2021    1       1       0       4 11/15/2021  11/20/2021 45 Arkansas Hill
0/17/2021   A bit low, recommended supplements                                blood iron           1
4          4       0       4 08/22/2020   12/16/2021 8419 Dawn Street
3/07/2021   u6L7n0fabTckPlo5Q8Bv7eoRdf3pwh                                19vbM2rEHcPEysZ8k1Hx6P2pk8zGfZ8           0
12         1       0       4 03/09/2022   03/09/2022 random address
3/09/2022   -                               Random test           0
13         1       0       4 03/09/2022   03/09/2022 random address
3/09/2022   -                               trisomy 21           0

4 record(s) selected.

swang298@winter2022-comp421:~$
```

xi

```

swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
1. Review notes
2. Review results
3. Add a note
4. Prescribe a test
5. Go back to the appointments
Enter your choice: 5
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
```

c)

i

```
swang298@winter2022-comp421:~/COMP421/p3$ db2 "SELECT * FROM MEDICALTEST WHERE FORBABY = FALSE AND INDIVIDUALID = 12"
TESTID      APPOINTMENTID FORBABY INDIVIDUALID PRESCRIBEDDATE SAMPLEDDATE LOCATION          TESTTYPE
-----      -----  -----  -----  -----  -----  -----  -----  -----
0 record(s) selected.

swang298@winter2022-comp421:~/COMP421/p3$
```

ii

```
swang298@winter2022-comp421:~/COMP421/p3$ java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 B Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :2
For appointment 2:
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
Enter your choice: 1
```

iii

swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :2
For Prue 12
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice: 1
For Prue 12
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
Enter your choice: ■

iv

swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :2
For Prue 12
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
|Enter your choice: 1
For Prue 12
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 Prue 12
1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments
Enter your choice: ■

v

```
swang298@winter2022-comp421:~/COMP421/p3$ db2 "SELECT * FROM MEDICALTEST WHERE FORBABY = FALSE AND INDIVIDUALID = 12"
TESTID      APPOINTMENTID FORBABY INDIVIDUALID PRESCRIBEDDATE SAMPLEDDATE LOCATION          TESTTYPE
ABDATE     TESTRESULT

-----
        14          21    0       12 03/11/2022   03/11/2022  random address          L
3/11/2022 -
                                         TESTTYPE
                                         Group B streptococcus          0

1 record(s) selected.

swang298@winter2022-comp421:~/COMP421/p3$
```

d)

```
i

swang298@winter2022-comp421:~/COMP421/p3$ java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
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: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
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 [format: YYYY-MM-DD ] list [E] to exit: 
```

ii

```
swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
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: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
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 [format: YYYY-MM-DD ] list [E] to exit: 2021-07-21
```

```
iii
swang298@winter2022-comp421:~/COMP421/p35 java GoBabyApp
Please enter your practitioner id [E] to exit: 1
Please enter the date for appointment [format: YYYY-MM-DD ] list [E] to exit: 2021-11-16
1: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
|Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :1
For Millicent 4
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: 2021-11-16 21:36:40.0 P Millicent 4
2: 2021-11-16 22:00:00.0 P Prue 12
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 [format: YYYY-MM-DD ] list [E] to exit: 2021-07-21
1: 2021-07-21 08:34:55.0 B Ninetta 13
2: 2021-07-21 18:52:01.0 B Ulrica 10
Enter the appointment number that you would like to work on. [E] to exit [D] to go back to another date :|
```

Indexing

4.

```
swang298@winter2022-comp421:~/COMP421$ db2 "CREATE INDEX MOTHER_INDEX ON MOTHER(phonenum, address)"  
DB20000I The SQL command completed successfully.  
swang298@winter2022-comp421:~/COMP421$
```

Data Analytics

```
swang298@winter2022-comp421:~/COMP421/p2$ db2 "EXPORT TO da.csv of del SELECT COUNT(*) FROM BABY WHERE birthday IS NOT NULL GROUP BY MONTH(birthday)"  
SQL3104N The Export utility is beginning to export data to file "da.csv".  
SQL3105N The Export utility has finished exporting "12" rows.  
Number of rows exported: 12  
swang298@winter2022-comp421:~/COMP421/p2$
```

