

Relational Model

Mothers (Hcid, Name, Phone, DoB, Addr, Email, Profession, DueD, BloodT)

Fathers (Fid, Name, Phone, DoB, Profession, Addr, Email, BooldT, Hid)

Couples (Cid, Hcid, Fid, Appr) {Hcid referencing Mother}

Pregnancies (Cid, Num, PrimID, BackupID, Status, Bid, Interested, HomeBirth)
{Cid referencing Couples}
{Bid referencing BirthCenter}
{PrimID, BackupID referencing Midwife}

Facilities (Hid, Name, Addr, Email, Phone, Web)

CommClinic (Hid) {Hid referencing Facilities}

BirthCenter (Hid, Capacity) {Hid referencing Facilities}

Midwives (MidId, Hid, Name, Phone, Email) {Hid referencing Facilities}

Technicians (TechId, Name, Phone)

Babies (Bid, Cid, Num, Name, Gender, DOB, BTime, BloodT)
{Num, Cid referencing Pregnancy}

Appointments (Aid, Num, Cid, Date, Time, MidId)
{MidId referencing Midwife} {Num, Cid referencing Pregnancy}

InfoSess (lid, MidId, Date, Time, Lang, Capacity){MidId referencing Midwife}

InfoRegistration (lid, Cid, Attended)
{Cid referencing Couple}
{lid referencing InfoSess}

Due Dates (Cid, Num, ApproxD, Info)
{Num, Cid referencing Pregnancy}

Notes (Aid, Date, Time, Text) {Aid referencing Appointment}

Tests (Tid, MidId, Num, Cid, Ttype, PresDate, SampDate, LabDate, TechId, Bid, Resultst, For)
{MidId referencing Midwife}
{Cid, Num referencing Pregnancy}
{Bid referencing Baby}
{TechId referencing Technicain}

Application Interaction

(a)

i.

```
[db2 => SELECT * FROM Midwife WHERE MIDID = 6;  
MIDID      HID      NAME          PHONE      EMAIL  
-----  
0 record(s) selected.
```

ii.

```
[nkabol@winter2022-comp421:~$ java GoBabbyApp  
Connecting to DB...  
SOCSUSER: nkabol  
SOCSPASSWD: namdar1234  
Successfully connected to the DB  
[Please enter your practitioner id [E] to exit:6  
ERROR: id doesn't exist  
Please enter your practitioner id [E] to exit:■
```

(b)

i.

```
db2 => SELECT m.Name, m.Hcid, p.cid, p.Num, p.PrimID  
FROM Mother m, Pregnancy p, Couple c  
WHERE m.Hcid = c.HcId  
AND c.Cid = P.Cid  
AND m.Hcid = 1  
;  
db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>  
NAME          HCID      CID      NUM      PRIMID  
-----  
Victoria Gutierrez          1        1        1        1  
Victoria Gutierrez          1        1        2        1  
2 record(s) selected.
```

ii.

```
[Please enter your practitioner id [E] to exit:1  
Please enter the date (year-month-day) for appointment list [E] to exit:■
```

iii.

```
Please enter your practitioner id [E] to exit:1  
Please enter the date (year-month-day) for appointment list [E] to exit:2022-03-24  
-----  
1: 13:30:00      P      Victoria Gutierrez      1  
2: 14:30:00      B      Liz Darner      2  
-----  
Enter the appointment number that you would like to work on.  
[E] to exit [D] to go back to another date :■
```

IV.

```
-----  
1: 13:30:00      P      Victoria Gutierrez      1  
2: 14:30:00      B      Liz Darner      2  
-----  
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 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
```

V.

```
For Victoria Gutierrez 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  
-----  
2022-03-24      13:40:00      The meeting was good  
2022-03-24      13:35:00      I have written a Iron Test  
2022-03-21      15:00:00      The meeting was productive  
2022-03-21      14:50:00      They have twins  
-----  
  
For Victoria Gutierrez 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
```

Vi.

```
For Victoria Gutierrez 1

1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments.
|Enter your choice:2
-----
2022-03-24      [Blood Iron]     Blood Iron OK
2022-03-28      [Ultrasound]    PENDING
```

```
For Victoria Gutierrez 1  
  
1. Review notes  
2. Review tests  
3. Add a note  
4. Prescribe a test  
5. Go back to the appointments  
Enter your choice: █
```

Vii.

```
For Victoria Gutierrez 1

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:
|This is a new note for testing
```

Viii

Ix.

```
For Victoria Gutierrez 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

-----
2022-03-24      13:40:00      The meeting was good
2022-03-24      13:35:00      I have written a Iron Test
2022-03-21      15:00:00      The meeting was productive
2022-03-21      14:50:00      They have twins
2022-03-12      17:23:59      This is a new note for testing
-----
```

For Victoria Gutierrez 1

X.

```
For Victoria Gutierrez 1

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 1
```

Xi.

```
db2 => SELECT DISTINCT m.name, f.name, p.cid, p.num, t.PresDate, t.TType, t.For, CASE
WHEN (t.Results IS NULL) THEN 'PENDING' WHEN LENGTH(t.Results) > 50 THEN LEFT(t.Results, 50) ELSE T.Results END AS Result FROM Appointment a, Tests t, Couple c, Pregnancy p, Mother m, Father f WHERE c.Cid = 1 AND f.Fid = c.Fid AND m.Cid = c.Cid AND a.Cid = c.Cid AND p.cid = c.cid AND t.Num = p.num AND t.cid = p.cid ORDER BY P.Num ;
db2 (cont.) =>

NAME          NAME        CID       NUM     PRESDATE    TTYPE      FOR      RESULT
-----        -----      ---       --      -----       ----      ---      -----
Victoria Gutierrez   John Guy      1        1 04/14/2022 Blood Iron      Mother    Blood Iron Not OK
Victoria Gutierrez   John Guy      1        1 04/28/2022 Blood Iron      Mother    Blood Iron Not OK
Victoria Gutierrez   John Guy      1        2 02/12/2022 Blood Iron      Baby     Blood Iron Not OK
Victoria Gutierrez   John Guy      1        2 03/24/2022 Blood Iron      Mother    Blood Iron OK
Victoria Gutierrez   John Guy      1        2 03/28/2022 Ultrasound      Mother    PENDING
Victoria Gutierrez   John Guy      1        2 03/12/2022 trisomy 21      Mother    PENDING

6 record(s) selected.
db2 => |
```

Xii.

```
For Victoria Gutierrez 1

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: 13:30:00      P      Victoria Gutierrez      1
2: 14:30:00      B      Liz Darner            2

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

(c)

1

ii

```
[E] to exit [D] to go back to another date :5  
ERROR: the index entered doesn't exist  
Enter the appointment number that you would like to work on.  
[E] to exit [D] to go back to another date :2  
  
For Liz Darnner 2  
  
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 the appointment number that you would like to work on.  
| [E] to exit [D] to go back to another date :2  
  
For Liz Darner 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  
-----  
2022-03-20      15:30:00      The father didnt show up  
-----  
  
For Liz Darner 2
```

Iv.

```
For Liz Darner 2

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 Liz Darner 2

1. Review notes
2. Review tests
3. Add a note
4. Prescribe a test
5. Go back to the appointments.
Enter your choice:■
```

V.

(d)

1

```
For Liz Darner 2

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: 13:30:00      P      Victoria Gutierrez      1
2: 14:30:00      B      Liz Darner      2
-----
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 (year-month-day) for appointment list [E] to exit:■
```

ii.

```
Enter your choice:5
-----
1: 13:30:00      P      Victoria Gutierrez    1
2: 14:30:00      B      Liz Darner        2
-----
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 (year-month-day) for appointment list [E] to exit:2022-03-21
```

lv.

```
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 (year-month-day) for appointment list [E] to exit:2022-03-21  
-----  
1: 14:30:00      P      Victoria Gutierrez    1  
2: 14:30:00      P      Nancy Domingo     3  
-----  
Enter the appointment number that you would like to work on.  
[E] to exit [D] to go back to another date :[]
```

Indexing

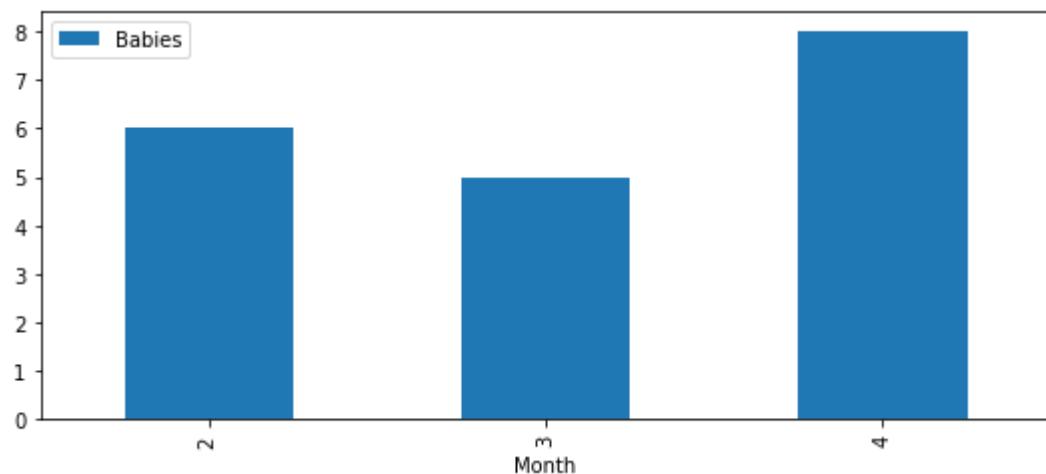
```
[db2 => CREATE UNIQUE INDEX indphone ON MOTHER(Phone) INCLUDE(Addr);  
DB20000I The SQL command completed successfully.  
db2 => ]
```

Data Analytics

```
;db2 (cont.) => db2 (cont.) => SQL3004N  The load, import, or export utility failed because the specified file type is not supported.  
db2 => EXPORT TO born.DEL OF DEL  
SELECT EXTRACT(MONTH FROM B.DoB) AS Month, COUNT(B.cid) AS Babies  
FROM BABY B, Pregnancy P  
WHERE B.cid = P.cid  
AND B.num = p.num  
AND P.Done = TRUE  
GROUP BY EXTRACT(MONTH FROM B.DoB)  
ORDER BY EXTRACT(MONTH FROM B.DoB)  
;  
  
db2 (cont.) => SQL3104N  The Export utility is beginning to export data to file "born.DEL".  
  
SQL3105N  The Export utility has finished exporting "3" rows.  
  
Number of rows exported: 3  
db2 =>
```

EXPORT TO result.csv OF DEL MODIFIED BY NOCHARDEL

```
SELECT EXTRACT(MONTH FROM B.DoB) AS Month,  
       COUNT(B.cid) AS Babies  
  FROM BABY B, Pregnancy P  
 WHERE B.cid = P.cid  
   AND B.num = p.num  
   AND P.Done = TRUE  
  
  GROUP BY EXTRACT(MONTH FROM B.DoB)  
 ORDER BY EXTRACT(MONTH FROM B.DoB);
```



```
import pandas as pd  
import matplotlib.pyplot as plt  
  
headers = [ 'Month', 'Babies' ]  
df = pd.read_csv('results.csv', names=headers)  
df.plot.bar('Month')  
plt.show()
```

