Relational Model

1.Institute(instituteID,name,addr,phone,email,web)
2.Midwife(pracID,name, email, phone,instituteID) instituteID ref Institute
3.Birthingcenter((instituteID) InstituteID ref Institute
4.CommunityClinic(instituteID) InstituteID ref Institute
5.Mother(HCardID,email,dob,name,phone,profession,bloodtype,addr)
6.Father(fatherID,name,HCardID,email,dob,phone,profession, bloodtype,addr)
7.Couple(coupleID,HCardID,fatherID) HCardID ref mother fatherID ref father
8.Technician(tecinstituteID,name,phone)
9.Pregnancy(coupleID, num, expdueym, lmpdued, usounddued, estdued, interested, homebirth, ppracID, bpracID, InstituteID) coupleID ref Couple, InstituteID ref Institute,ppracID ref Midwife,bpracID refMidwife
10.Baby(babyid, gender, dob, btime, bloodtype, bname, pregnum, coupleID) (pregnum, CoupleID) ref Pregnancy
11. Tests(testid, ttype, prescdate, sampdate, labdate, results, pracID, pregnum, CoupleID, babyid, techID) pracID ref Midwife, (CoupleID, pregnum) ref Pregnancy, babyid ref Baby, techID ref Technician
12. InfoSession(infoID, sdate, stime, lang, practid) practid ref Midwife
13. Appointment(appointmentid, adate, atime, pregnum, coupleID, practid, instituteID) (pregnum,coupleID) ref Pregnancy, practid ref Midwife, instituteID ref BirthCenter
14. InfoSessionRegistration(infoID, coupleID, attended)
15. Notes(noteID,appointmentid,content,ndate,ntime) appointmentid ref Appointment

Pending constraints

1. The tests is not linked to appointment, so there might be case where tests are prescribed by midwives not during appointments; even the tests could be prescribed by the midwife not specifically assigned to that pregnancy.
2. Midwife can be assigned to couples without attending infosessions.
3. A couple could form twice and this info cannot be captured by the database.
4. The database doesn't prevent pregancy specified to home birth asscociated with midwife in birthing center.
5. The database doesn't capture which birthing center where the birth will happen, since they can do that in birthing center the midwife does not work in.
6. The tests could be performed on both mother and baby which is not ideal.
7. We cannot add multiple back up midwives. The database doesn't prevent backup midwife be the same primary midwife.
8. It's possible that the ultrasounded in pregnancy is changed without by certain tests; this should be restricted in appication side.

SQL Queries

5a.

```
select adate,atime,A.HcardID,M.name,M.phone from(
select adate, atime, HCardID    from (
select adate, atime,coupleID from Appointment
where practid in (
select pracid from midwife
  where name='Marion Girard'
                              )
and adate>='2022-03-21' and adate<='2022-03-25'
) as A    left join couple as C
on A.coupleID=C.coupleID
       ) as A left join mother as M
  on A.HcardID = M.HcardID;
```

```
db2 => select adate,atime,A.HcardID,M.name,M.phone from(
select adate, atime, HCardID  from (
select adate, atime,coupleID from Appointment
where practid in (
select pracid from midwife
 where name='Marion Girard'
                )
and adate>='2022-03-21' and adate<='2022-03-25'
) as A  left join couple as C
on A.coupleID=C.coupleID
    ) as A left join mother as M
 on A.HcardID = M.HcardID;
db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (co
ADATE      ATIME    HCARDID     NAME                           PHONE
---------- -------- ----------- ------------------------------ --------------------
03/23/2022 09:00:00      330005 Xi                                     5145577005
03/24/2022 10:00:00      330006 Julie                                  5145577006

  2 record(s) selected.

db2 =>
```

5b.

```
select results,labdate from Tests
where coupleID in
        (
              select coupleId
              from couple
              where hcardid in (
                    select hcardid
                    from mother
                    where name = 'Victoria Gutierrez'
              )
        ) and pregnum=2 and ttype='blood iron'
;
```

```
db2 => select results,labdate from Tests
where coupleID in
      (
          select coupleId
          from couple
          where hcardid in (
              select hcardid
              from mother
              where name = 'Victoria Gutierrez'
          )
      ) and pregnum=2 and ttype='blood iron'
;db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>

RESULTS                                                                                            LABDATE
-------------------------------------------------------------------------------------------------- ----------
Decent blood iron level                                                                            04/05/2022
Excellent blood iron level                                                                         05/05/2022

  2 record(s) selected.
```

5c.

```
SELECT NAME,COALESCE(pregdue, 0 ) as pregdue
FROM (
select NAME, pregdue
from INSTITUTE I
left join (select instituteid, count(concat(COUPLEID, expdueym)) as pregdue
 from (
 select expdueym, instituteid, PPRACID, COUPLEID
  from pregnancy
  where expdueym <= '2022-07-31' and expdueym >= '2022-07-01'
      )
            group by instituteid) as A
                on I.instituteid = A.INSTITUTEID
    );
```

```
db2 =>
SELECT NAME,COALESCE(pregdue, 0 ) as pregdue
FROM (
select NAME, pregdue
from INSTITUTE I
left join (select instituteid, count(concat(COUPLEID, expdueym)) as pregdue
 from (
 select expdueym, instituteid, PPRACID, COUPLEID
  from pregnancy
  where expdueym <= '2022-07-31' and expdueym >= '2022-07-01'
     )
          group by instituteid) as A
             on I.instituteid = A.INSTITUTEID
    )

db2 => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont
.) => db2 (cont.) => db2 (cont.) =>
db2 (cont.) => ;

NAME                           PREGDUE
------------------------------ -----------
Rosement                                 1
Longueuil                                1
Lac-Saint-Louis                          1
Dorval                                   0
Verdun                                   0
Kirkland                                 0
Brossard                                 0
Trudeau                                  0
Nuns                                     0
Hochelaga                                0
Beaconsfield                             0
Lasalle                                  0

  12 record(s) selected.

db2 =>
```

5d.

```
--pregnant mother
select HcardID,name,phone
from mother where hcardid in (
	select Hcardid from couple
	where coupleid in (
		select coupleid
		from (
--pregnant couples not yet born baby
			select coupleId
				, num
			from pregnancy
			except
			select coupleId
				, pregnum
			from baby)
		INTERSECT
--coupld under care of midwife working for Lac-Saint-Louis
		select coupleid
		from pregnancy
		where ppracID in (
--midwife work for Lac-Saint-Louis
			select pracid
			from midwife
			where instituteID in (
				select instituteID
				from institute
				where name = 'Lac-Saint-Louis'
			)
		)
		--backup midwife
		or bpracID in (
--midwife work for Lac-Saint-Louis
			select pracid
			from midwife
			where instituteID in (
				select instituteID
				from institute
				where name = 'Lac-Saint-Louis'
			)
		)
	);
```

CALENDAR Tomorrow
Yukon Heritage Day (Yukon)
Tomorrow

```
db2 => --pregnant mother
select HcardID,name,phone
from mother where hcardid in (

    select Hcardid from couple
    where coupleid in (
        select coupleid
        from (
--pregnant couples not yet born baby
                 select coupleId
                      , num
                 from pregnancy
                 except
                 select coupleId
                      , pregnum
                 from baby)
        INTERSECT
--coupld under care of midwife working for Lac-Saint-Louis
        select coupleid
        from pregnancy
        where ppracID in (
--midwife work for Lac-Saint-Louis
            select pracid
            from midwife
            where instituteID in (
                select instituteID
                from institute
                where name = 'Lac-Saint-Louis'
            )
        )
           --backup midwife
           or bpracID in (
--midwife work for Lac-Saint-Louis
            select pracid
            from midwife
            where instituteID in (
                seledb2 => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2
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ont.) => ct instituteID
                from institute
                where name = 'Lac-Saint-Louis'
            )
        )
    )
)db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) =>
db2 (cont.) => ;

HCARDID     NAME                           PHONE
----------- ------------------------------ --------------------
     330007 Olivia                                   5145577007
     330008 Monica                                   5145577008

  2 record(s) selected.
```

5e.

```
select hcardid,name from mother where hcardid in(
select hcardid from couple
where coupleid in(
select distinct coupleid from(
        --get coupleid for such pregid
select coupleid,    concat(concat(coupleid, ':'),num) as pregid
from pregnancy) as A right join (
                --get pregnancy with more than 1 baby
                select pregid
                from (
                                --get baby number for each pregnancy
                                select count(concat(concat(coupleid, ':'), pregnum)) as numbaby,
                                              concat(concat(coupleid, ':'), pregnum)                as pregid
                                from baby
                                group by concat(concat(coupleid, ':'), pregnum)
                         )
                where numbaby > 1) as B
on A.pregid=B.pregid));
```

```
db2 => select hcardid,name from mother where hcardid in(
select hcardid from couple
where coupleid in(
select distinct coupleid from(
    --get coupleid for such pregid
select coupleid,  concat(concat(coupleid, ':'),num) as pregid
from pregnancy) as A right join (
        --get pregnancy with more than 1 baby
        select pregid
        from (
                --get baby number for each pregnancy
                select count(concat(concat(coupleid, ':'), pregnum)) as numbaby,
                        concat(concat(coupleid, ':'), pregnum)        as pregid
                from baby
                group by concat(concat(coupleid, ':'), pregnum)
             )
        where numbaby > 1) as B
[on A.pregid=B.pregid))db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont]
.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => db2 (cont.) => ;

HCARDID     NAME
----------- ------------------------------
     330006 Julie

  1 record(s) selected.

db2 =
```

Midwife Information

6a.

CREATE VIEW midwifeinfo (pracid,midwifename,phone,email,institutename,addr)

AS SELECT m.pracid,m.name as midwifename,m.phone,m.email,p.name as institutename,p.addr

FROM midwife m left join institute P

on m.instituteid = P.instituteid;

6b.

```
db2 => CREATE VIEW midwifeinfo (pracid,midwifename,phone,email,institutename,addr)
AS SELECT m.pracid,m.name as midwifename,m.phone,m.email,p.name as institutename,p.addr
   FROM midwife m  left join  institute P
[on m.instituteid = P.instituteiddb2 (cont.) => db2 (cont.) => db2 (cont.) => ;
DB20000I  The SQL command completed successfully.
db2 =
```

6c.

```
db2 =>  select * from midwifeinfo
                limit 5db2 (cont.) => ;

PRACID      MIDWIFENAME                    PHONE               EMAIL                                              INSTITUTENAME                ADDR
----------- ------------------------------ ------------------- -------------------------------------------------- ---------------------------- ------------------------------
--------------
     220001 Marion Girard                          5145577890 marion@gmail.com                                   Rosement                     11 Rosement
     220002 Bill Bores                             5145577891  bill@gmail.com                                    Hochelaga                    122 Hochelaga
     220003 James Bond                             5145577892  james@gmail.com                                   Longueuil                    2312 Longueuil
     220004 Tom Will                               5145577893 too m@gmail.com                                    Dorval                       1223 Dorval
     220005 Jenny Ford                             5145577894  jenny@gmail.com                                   Trudeau                      1234 Trudeau

  5 record(s) selected.

db2 =
```

6d.

```
db2 => select * from midwifeinfo
[where institutename='Lac-Saint-Louis'db2 (cont.) => ;                                                                                                                  ]

PRACID      MIDWIFENAME                    PHONE               EMAIL                                              INSTITUTENAME                ADDR
----------- ------------------------------ ------------------- -------------------------------------------------- ---------------------------- ------------------------------
--------------
     220012 Shames McKay                           5145577901 shames@gmail.com                                   Lac-Saint-Louis              2334 Lac-Saint-Louis

  1 record(s) selected.

db2 =
```

6e.

The insert command fails. The view is virtual but when you do insert it's in effect with real tables as well. Since midwifeinfo is produced with join command. The database don't know where to insert data in the two underlying tables.

```
db2 => INSERT INTO midwifeinfo (pracid,midwifename,phone,email,institutename,addr) VALUES ('11777','Mantha','5144424251','manthat@gmail.com','Lac Hubert','233 lacshore')
db2 (cont.) => ;
DB21034E  The command was processed as an SQL statement because it was not a
valid Command Line Processor command.  During SQL processing it returned:
SQL0150N  The target fullselect, view, typed table, materialized query table,
range-clustered table, or staging table in the INSERT, DELETE, UPDATE, MERGE,
or TRUNCATE statement is a target for which the requested operation is not
permitted.  SQLSTATE=42807
db2 =>
```

Check Constraints

```
db2 => alter table tests add constraint  labdate check(prescdate<labdate);
DB20000I  The SQL command completed successfully.
```

```
db2 => INSERT INTO Tests (testid,ttype,prescdate,sampdate,labdate,results,pracID
,pregnum,coupleID,babyID,techID) VALUES ('880907','blood iron','2022-03-09','202
2-03-11','2022-02-05','Excellent blood iron level','220001','2','550001',null,'6
60001');
DB21034E  The command was processed as an SQL statement because it was not a
valid Command Line Processor command.  During SQL processing it returned:
SQL0545N  The requested operation is not allowed because a row does not
satisfy the check constraint "TZHANG71.TESTS.LABDATE".  SQLSTATE=23513
db2 =>
```