COMP 421 Project Deliverable 3

Usman Hameed Ullah
260925886

16 March 2022

1 Relational Translation

Midwife(<u>practitionerID</u>, name, email, phone number, institutionemail)

- institutionemail foreign key referencing relation "Employs" with Birthing Institution

BirthingInstitution(<u>institutionemail</u>, name, phonenumber, address, website)

- Birthing Institution ISA is covering
- Birthing Institution entity only exists in one of the sub-classes

BirthingCentre(<u>institutionemail)</u>

CommunityClinic(<u>institutionemail</u>)

Pregnancy(<u>pregnancyID</u>, pregnancynumber, menstrualduedate, datingultrasoundduedate, finalduedate, expectedbirth, practitionerID, practitionerID, parentsID, institutionemail)

- First practionerID foreign key referencing relation "Primary for" with Midwife
- Second practionerID foreign key referencing relation "Secondary for" with Midwife
- ParentsID foreign key referencing relation "Have" with Baby's Parents
- Institutionemail foreign key referencing relation "Birthed at" with Birthing Institution (optional)

Parents(<u>parentsID</u>, patientID, fatherID)

- PatientID foreign key referencing relation "In" with Mother
- FatherID foreign key referencing relation "In" with Father

Patient(<u>patientID</u>, bloodtype)

- Patient ISA is covering
- Patient entity only exists is one of the sub-classes

Baby(<u>patientID</u>, name, gender, dateofbirth, timeofbirth)

Mother(<u>patientID</u>, name, address, phonenumber, QChealthcardID, email, dateofbirth)

- Mother has a participation constraint for the "In" relation with Baby's Parents

Father(fatherID, name, blood type, address, email, phonenumber, QChealthcardID, dateofbirth)

Appointment(appointmentID, date, time, pregnancyID)
- PregnancyID foreign key referencing relation "Related" with Pregnancy

AppoinmentSchedules(practitionerID, appointmentID)
- PractitionerID foreign key referencing relation "Schedules" with Midwife
- AppointmentID foreign key referencing relation "Schedules" with Appointment
- Appointment has a participation constraint for the "Schedules" relation with Midwife

Note(noteID, appointmentID, date, time, description)
- AppointmentID foreign key referencing relation "Written during" with Appointment

Test(testID, dateprescribed, datesampletaken, datelabworkdone, type, result, practitionerID)
- PractitionerID foreign key referencing relation "Assigns" with Midwife

CompletedBy(technicianID, testID)
- TechnicianID foreign key referencing relation "Completed by" with Technician
- TestID foreign key referencing relation "Completed by" with Test

For(testID, patientID)
- TestID foreign key referencing relation "For" with patient
- PatientID foreign key referencing relation "For" with Test

Technician(technicianID, name, phonenumber)

InformationSession(sessionID, date, time, language, practitionerID)
- PractitionerID foreign key referencing relation "Hosts" with Midwife

Registered(parentsID, sessionID, attended)
- ParentsID foreign key referencing relation "Registered" with Information Session
- SessionID foreign key referencing relation "Registered" with Baby's Parents
- Baby's Parents have a participation constraint for the "Registered" relation with Information Session

BirthedAtBirthingCentre(pregnancyID, institutionemail)

- PregnancyID foreign key referencing relation "Birthed at" with Birthing Centre
- Institutionemail foreign key referencing relation "Birthed At" with Pregnancy

2 Application Interaction

2.1 Question 3, part a

i.
```
db2 => SELECT * FROM MIDWIFE WHERE PRACTITIONERID = 914583000;

PRACTITIONERID NAME                                                EMAIL
       PHONENUMBER                                          INSTITUTIONEMAIL
-------------- --------------------------------------------- ---------------------------------------------
------ --------------------------------------------------- -------------------------------------------------

  0 record(s) selected.

db2 =>
```

ii.
```
/Users/usmanhameedullah/Library/Java/JavaVirtualMachines/openjdk-
Please enter your practitioner id [E] to exit:
914583000
ID Entered is not valid.
Please enter your practitioner id [E] to exit:

```

2.2 Question 3, part b

i.
```
db2 => SELECT COUNT(*) AS NumOfPregnancies FROM PREGNANCY, PARENTS WHERE PREGNANCY.PARENTSID = PARENTS.PARENTSID AND PARENTS.MOTHERID = 7100281;

NUMOFPREGNANCIES
----------------
               2

  1 record(s) selected.

db2 =>
```

ii.
```
Please enter your practitioner id [E] to exit:
914583096
Please enter the date for appointment list [E] to exit:
```

iii.
```
Please enter the date for appointment list [E] to exit:
'03/21/2022'
1:  09:00:00    P   Isabella Gonzales   GONI 1303 0157
2:  15:28:00    P   Brynne Odom ODOB 1779 9109
```

iv.

```
Enter the appointment number you would like to work on. [E] to exit [D] to go back to another date:
1
For Isabella Gonzales GONI 1303 0157

1.  Review notes
2.  Review tests
3.  Add a note
4.  Prescribe a test
5.  Go back to the appointments.

Enter your choice:
```

v.

```
Enter your choice:
1
2022-03-22  12:44:00    Sample notes text 8
2022-03-21  09:31:00    Sample notes text 7
2021-02-03  19:28:00    Sample notes text 4
For Isabella Gonzales GONI 1303 0157

1.  Review notes
2.  Review tests
3.  Add a note
4.  Prescribe a test
5.  Go back to the appointments.

Enter your choice:
```

vi.

```
Enter your choice:
2
2021-08-24 [Blood Type Test] O-
2022-01-04 [Blood iron] Very low. Supplemented needed.
For Isabella Gonzales GONI 1303 0157

1.  Review notes
2.  Review tests
3.  Add a note
4.  Prescribe a test
5.  Go back to the appointments.

Enter your choice:
```

vii.
```
Enter your choice:
3
Please type your observation:
Couple is leaning towards home birth
For Isabella Gonzales GONI 1303 0157

1.  Review notes
2.  Review tests
3.  Add a note
4.  Prescribe a test
5.  Go back to the appointments.


Enter your choice:
```

viii.
```
[db2 => SELECT NOTEID, NOTE.DATE, NOTE.TIME, NOTE.DESCRIPTION, PREGNANCY.PREGNANCYNUMBER, MOTHER.NAME, FATHER.NAME FROM NOTE, APPOINTMENT, PREGNANCY, PARENTS, MOTHER, FATHER WHERE NOTE.APPOINTMENTID = APPOINTMENT.APPOINTMENTID AND APPOINTMENT.PREGNANC]
YID = PREGNANCY.PREGNANCYID AND PREGNANCY.PARENTSID = PARENTS.PARENTSID AND PARENTS.MOTHERID = 1714791 AND PARENTS.MOTHERID = MOTHER.PATIENTID AND PARENTS.FATHERID = FATHER.FATHERID;

NOTEID    DATE       TIME     DESCRIPTION                                                          PREGNANCYNUMBER NAME                            NAME
--------- ---------- -------- -------------------------------------------------------------------- --------------- ------------------------------- -------------------------------
  5769062 02/03/2021 19:28:00 Sample notes text 4                                                                1 Isabella Gonzales              Louis Evans
  3313123 03/21/2022 09:31:00 Sample notes text 7                                                                1 Isabella Gonzales              Louis Evans
  3313534 03/22/2022 12:44:00 Sample notes text 8                                                                1 Isabella Gonzales              Louis Evans
  9391897 03/15/2022 22:45:56 Couple is leaning towards home birth                                               1 Isabella Gonzales              Louis Evans

  4 record(s) selected.

db2 =>
```

ix.
```
Enter your choice:
1
2022-03-22  12:44:00    Sample notes text 8
2022-03-21  09:31:00    Sample notes text 7
2022-03-15  22:45:56    Couple is leaning towards home birth
2021-02-03  19:28:00    Sample notes text 4
For Isabella Gonzales GONI 1303 0157


1.  Review notes

2.  Review tests

3.  Add a note

4.  Prescribe a test

5.  Go back to the appointments.


Enter your choice:
|
```

x.

```
Please enter the type of test:
trisomy 21
For Isabella Gonzales GONI 1303 0157

1.  Review notes
2.  Review tests
3.  Add a note
4.  Prescribe a test
5.  Go back to the appointments.


Enter your choice:
```

xi.

```
db2 => SELECT TEST.TestID, Type, Prescribed, SampleTaken, LabDone, Result, PractitionerID FROM TEST, TESTCOMPLETEDFOR WHERE TEST.TESTID = TESTCOMPLETEDFOR.TESTID AND TESTCOMPLETEDFOR.PATIENTID = 1714791;

TESTID      TYPE                                              PRESCRIBED SAMPLETAKEN LABDONE    RESULT                                              PRACTITIONERID
----------- ------------------------------------------------- ---------- ----------- ---------- --------------------------------------------------- --------------
    8087884 Blood Type Test                                   08/24/2021 09/30/2021  10/03/2021 O-                                                       443035811
    5244212 Blood iron                                        01/04/2022 01/04/2022  01/08/2022 Very low. Supplemented needed.                           443035811
    8342441 trisomy 21                                        03/16/2022 03/16/2022  03/16/2022 PENDING                                                  914583096

  3 record(s) selected.

db2 =>
```

xii.

```
Enter your choice:
5
1:  09:00:00     P   Isabella Gonzales   GONI 1303 0157
2:  15:28:00     P   Brynne Odom ODOB 1779 9109
Enter the appointment number you would like to work on. [E] to exit [D] to go back to another date:
```

2.3 Question 3, part c

i.

```
db2 => SELECT TEST.TestID, Type, Prescribed, SampleTaken, LabDone, Result, PractitionerID FROM TEST, TESTCOMPLETEDFOR WHERE TEST.TESTID = TESTCOMPLETEDFOR.TESTID AND TESTCOMPLETEDFOR.PATIENTID = 7100281;

TESTID      TYPE                                              PRESCRIBED SAMPLETAKEN LABDONE    RESULT                                              PRACTITIONERID
----------- ------------------------------------------------- ---------- ----------- ---------- --------------------------------------------------- --------------
    3260001 Blood Type Test                                   06/06/2021 06/06/2021  06/09/2021 A+                                                       914583096
    3342331 Blood iron                                        07/01/2021 07/01/2021  07/04/2021 A bit low, supplements recommended.                      914583096

  2 record(s) selected.

db2 =>
```

ii.

```
Enter the appointment number you would like to work on. [E] to exit [D] to go back to another date:
2
For Brynne Odom ODOB 1779 9109

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 your choice:
1
2021-08-09  08:30:00    Sample notes text 2
2021-08-07  17:28:00    Sample notes text 1
For Brynne Odom ODOB 1779 9109

1.   Review notes
2.   Review tests
3.   Add a note
4.   Prescribe a test
5.   Go back to the appointments.

Enter your choice:
```

iv.

```
Enter your choice:
4
Please enter the type of test:
Group B streptococcus
For Brynne Odom ODOB 1779 9109

1.   Review notes
2.   Review tests
3.   Add a note
4.   Prescribe a test
5.   Go back to the appointments.

Enter your choice:
```

v.

```
[db2 => SELECT TEST.TestID, Type, Prescribed, SampleTaken, LabDone, Result, PractitionerID FROM TEST, TESTCOMPLETEDFOR WHERE TEST.TESTID = TESTCOMPLETEDFOR.TESTID AND TESTCOMPLETEDFOR.PATIENTID = 7100281;

TESTID     TYPE                              PRESCRIBED SAMPLETAKEN LABDONE    RESULT                                          PRACTITIONERID
---------- --------------------------------- ---------- ----------- ---------- ----------------------------------------------- --------------
   3260001 Blood Type Test                   06/06/2021 06/06/2021  06/09/2021 A+                                                    914583096
   3342331 Blood iron                        07/01/2021 07/01/2021  07/04/2021 A bit low, supplements recommended.                  914583096
   6656508 Group B streptococcus             03/16/2022 03/16/2022  03/16/2022 Pending                                             914583096

  3 record(s) selected.

db2 =>
```

2.4 Question 3, part d

```
For Isabella Gonzales GONI 1303 0157

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:  09:00:00    P   Isabella Gonzales   GONI 1303 0157
2:  15:28:00    P   Brynne Odom ODOB 1779 9109
Enter the appointment number 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:
'02/02/2022'
1:  08:09:00    P   Brynne Odom ODOB 1779 9109
2:  09:23:00    P   Isabella Gonzales   GONI 1303 0157
3:  11:04:00    P   Victoria Gutierrez  MARG 3812 0430
Enter the appointment number you would like to work on. [E] to exit [D] to go back to another date:
```

3   Indexing

```
[db2 => create index phoneNumber on mother(phoneNumber);
DB20000I  The SQL command completed successfully.
db2 =>
```