COMP 421: Project 1

Dina Shoham - 260823582

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Assumptions

- A pregnancy must involve at least one baby.
- A couple need only be associated to a single parent (the mother).
- A pregnancy must be associated to exactly one couple.
- An information session is hosted by one midwife.
- An information session is located at/hosted by the health care institution at which the host midwife works.

Restrictions

- The Person ISA hierarchy has a covering constraint and an overlap constraint (a Person must be either a Parent, a Lab_Tech, or a Midwife). If a user of the system needs to switch roles (i.e. a midwife becomes pregnant and wants to use the system as a parent), they must create a new Person in the database (creating a new account/profile).
- The HC_Institution ISA hierarchy has a covering constraint and an overlap constraint as well (an institution must be either a Birthing_Center or a Community_Clinic).
- For a Pregnancy to be assigned a primary Midwife, they must have attended an Info_Session.
- For a Pregnancy to be assigned a secondary Midwife, they must have a primary Midwife.
- A secondary Midwife must be assigned well before the expected birth time frame.
- If the attribute is_home_birth (Pregnancy) is true, then a Pregnancy cannot have the location_of_birth association with a Birthing_Center. Conversely, if that association does exist, then is_home_birth must be false.
- If is_home_birth is true, then we assume the birth will take place at the home address of the mother (in case the mother and father have different addresses).

- A medical test can only be conducted by one lab technician. If a lab tech works with their colleagues on the test, only one of them can access/update information about the test on the system.
- A medical test must be associated with either a baby or a mother.

Artificial Keys

Artificial keys were created for the following entities: Person, Couple, Info_Session, Pregnancy, Baby, Appointment, Appt_Note, and Medical_Test

Relational Translation

- Person(person_id, phone_num, name)
- Parent(person_id, phone_num, name, blood_type, date_of_birth, profession, email, quebec_health_id, address)
- Midwife(person_id, phone_num, name, email, practitioner_id, institution_email)
  institution_email references HC_Institution
- PrimaryMidwife(preg_id, pm_id)
  preg_id references Pregnancy, pm_id references Midwife
- SecondaryMidwife(preg_id, sm_id)
  preg_id references Pregnancy, sm_id references Midwife
- Lab_Tech(person_id, phone_num, name)
- Couple(couple_id, num_pregnancy, mother_id)
  mother_id references Parent (via mother)
- Father(couple_id, person_id)
  person_id references Parent, couple_id references Couple
- Info_Session(session_id, date, time, language, host_id)
  host_id references Midwife
- Invitation(couple_id, session_id, did_register, did_attend)
  couple_id references Couple, session_id references Info_Session
- Pregnancy(preg_id, birth_time_frame, due_date_period, due_date_ultrasound, due_date_final, is_home_birth, couple_id)
  couple_id references Couple

- Baby(baby_id, blood_type, name, birth_date, birth_time, sex, preg_id)
  preg_id references Pregnancy
- Appointment(appt_id, date, time, preg_id, mw_id)
  preg_id references Pregnancy, mw_id references Midwife
- Appt_Note(note_id, timestamp, observations, appt_id)
  appt_id references Appointment
- Medical_Test(test_id, test_type, prescription_date, sample_date, lab_work_date, test_result, lt_id)
  lt_id references Lab_Tech
- Test_Needed(appt_id, referral, samples_taken)
  appt_id references Appointment
- Maternal_Test(test_id, mother_id)
  test_id references Medical_Test, mother_id references Parent
- Fetal_Test(test_id, baby_id)
  test_id references Medical_Test, baby_id references Baby
- HC_Institution(email, address, website, name, phone_num)
- Birthing_Center(email, address, website, name, phone_num)
- Community_Clinic(email, address, website, name, phone_num)