COMP421 – Project 1

NAME: SEUNG WON JOENG
STUDENT ID: 260735232

I. Restrictions

First of all, I separated address and postal code. A real world, the address contains the information of postal code, but to ease to track postal code to match between locations and people, I added the postal code attribute for this project.

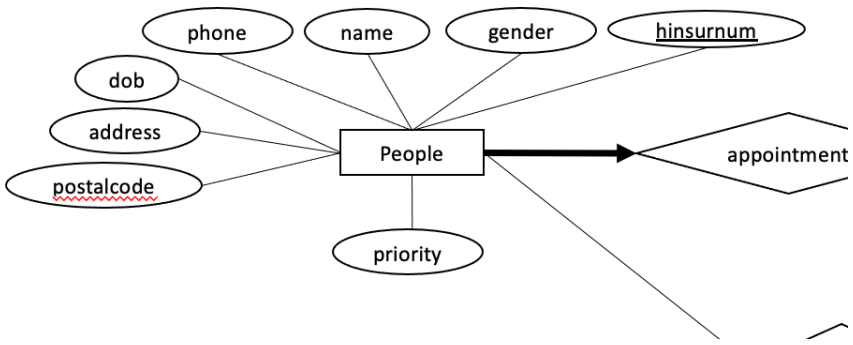
Entity Set: People

An entity set *People* contains the person's basic information such as health insurance number, name, phone, address, date of birth, gender. Moreover, I chose an ISA hierarchy for "Health care workers", "Teachers", and "Essential Service Workers", since the system should track for identifying individuals belonging to a specific category and those categories should have different types of their identification numbers. For those who are elderly and children, since we can calculate an age using a dob attribute, they are not in the part of ISA hierarchies.

Note:

- hinsurnum: health insurance number.
- eid: Employee id for essential service workers
- hceid: Employee id for health care workers
- tid: Employee id for teachers

I also claim that we can use different design of an er diagram for entity set, People, as like,



Above design, I put priority attribute instead of using ISA hierarchy.

Entity set: Locations / Slots

The reason why I split them is to create/track the slots for each location. I assumed that there is only one time for each slot in a selected location, and slot cannot exist itself, so I designed it as a weak entity set.

Entity set: Shippings

The purpose of this entity set is to track storing the vaccines at each location. Each location can get various types of vaccines at each time. This is also reason why I designed it as an entity set instead of a relation between Vaccines and Locations.

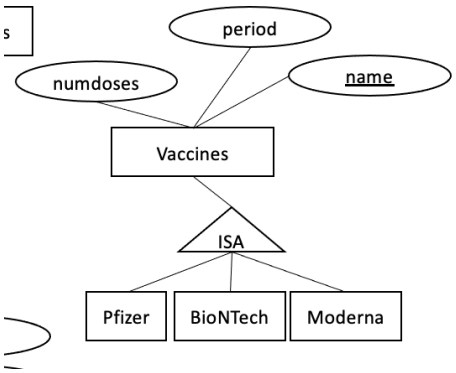
Note:

- sid represents a shipping id

Entity set: Vaccines

For this entity set, I could mis-understand the instructions. If I were, I'd better use an ISA hierarchy to show three existed types of vaccine: Pfizer, BioNtech, and Moderna. However, I think the purpose of this entity set is to know what types of existence vaccines and to track their information such as a period, number of doses, etc.

If I chose incorrectly, then er diagram should look like,



with each has an appropriate attribute.

II. Relational Translation

Ver1.

People(<u>hinsurnum</u>, name, gender, phone, dob, address, postalcode, rid)
rid references Registrations
EssentialServiceWorkers(<u>hinsurnum</u>, eid)
HealthCareWorkers(<u>hinsurnum</u>, hceid)
Teachers(<u>hinsurnum</u>, tid)
All hinsurnums reference People

Ver2.

People(<u>hinsurnum</u>, name, gender, phone, dob, address, postalcode, priority, rid)
rid references Registrations

Registrations(<u>rid</u>, dateReg, hinsurnum)
hisnurnum references People

Locations(<u>lname</u>, npeople, address, postalcode, date)

Slots(lname, time, amount)
    Lname references Locations

Nurses(licnesenumber, nursename, employer)
Works(lname, licensenumber)
    Lanme references Locations
    Licensenumber references Nurses

Vaccines(name, period, numdoses)
Shots(vialNum, hinsurnum, vname, lname)
    Hinsurnum references People (Not NULL)
    Vname references Vaccines (Not NULL)
    Lname references Locations (Not NULL)

Shippings(sid, expirydate, bnumber, mdate, vname, lname)
    Vname references Vaccines
    Lname references Locations

As I changed/claimed some structures, I believe that there's no redundancy for this project.