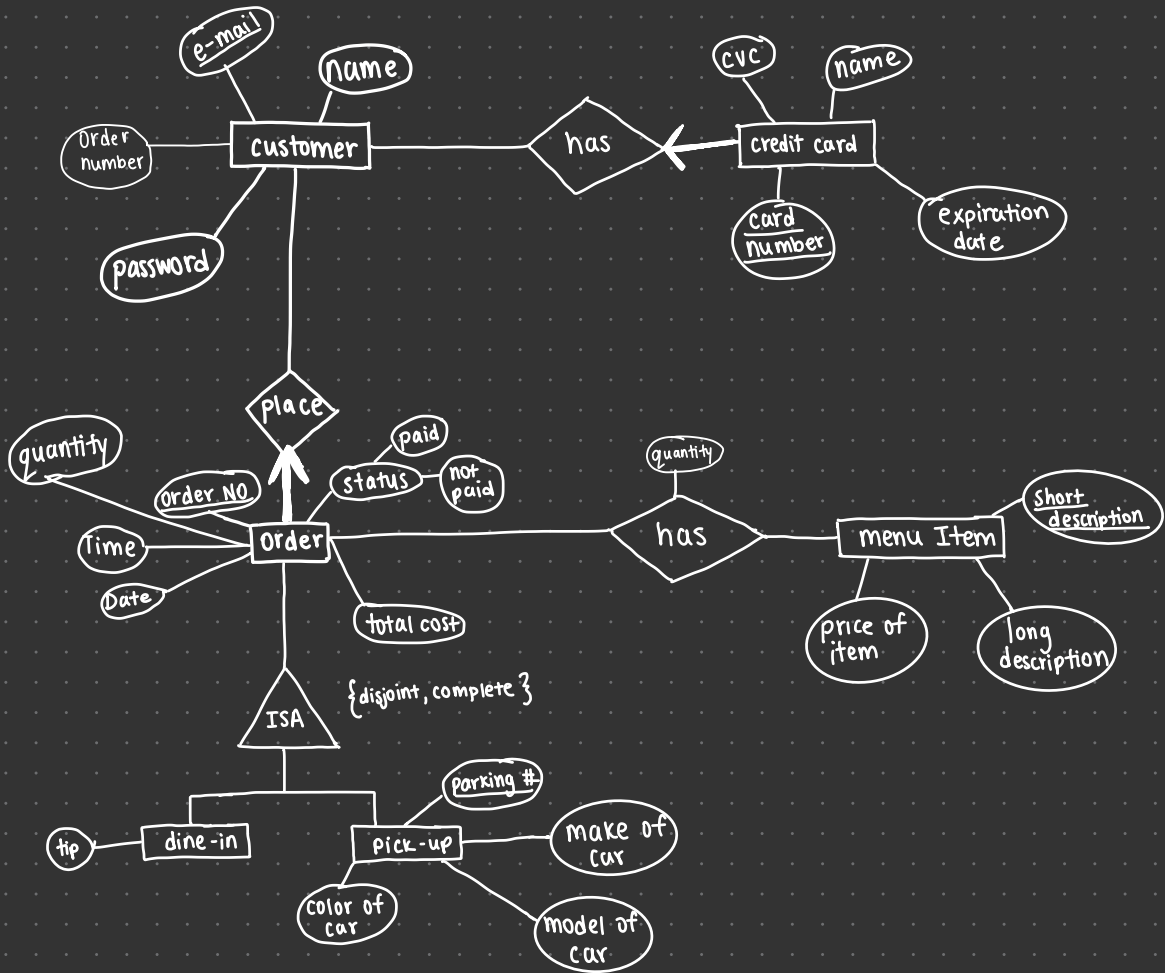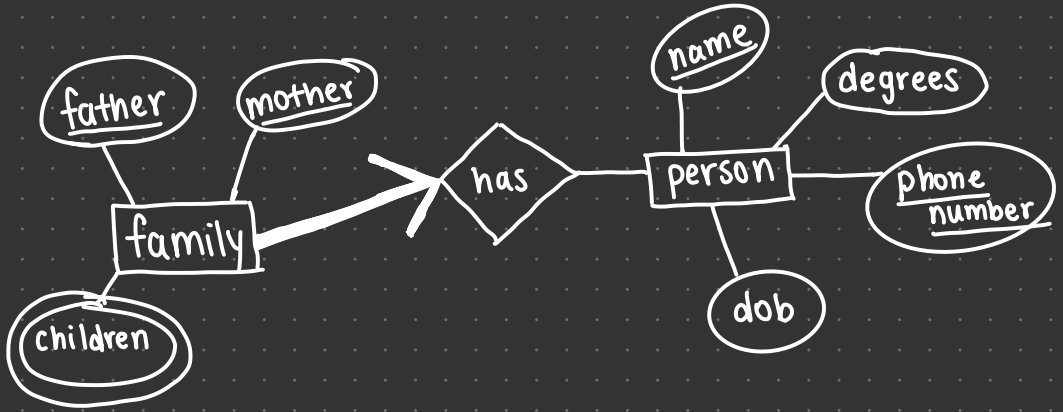Question 1

Assumptions:

→ Order Number (Order No) is primary key.

→ Parking number has been underlined because I am assuming this is representing only one order, so only one car for order, so at one time, there is only one specific car at one specific parking space for a specific order.

father

mother

family

children

has

name

degrees

person

phone number

dob

Patient (id : int, admit_date : date, physician_SSN : varchar (11), primary key (id), foreign key (physician_SSN) references Physician not null)

Physician (physician_SSN : varchar(11), name : Varchar (50), address : Varchar (50), phone : varchar (10), primary key (Physician - SSN))
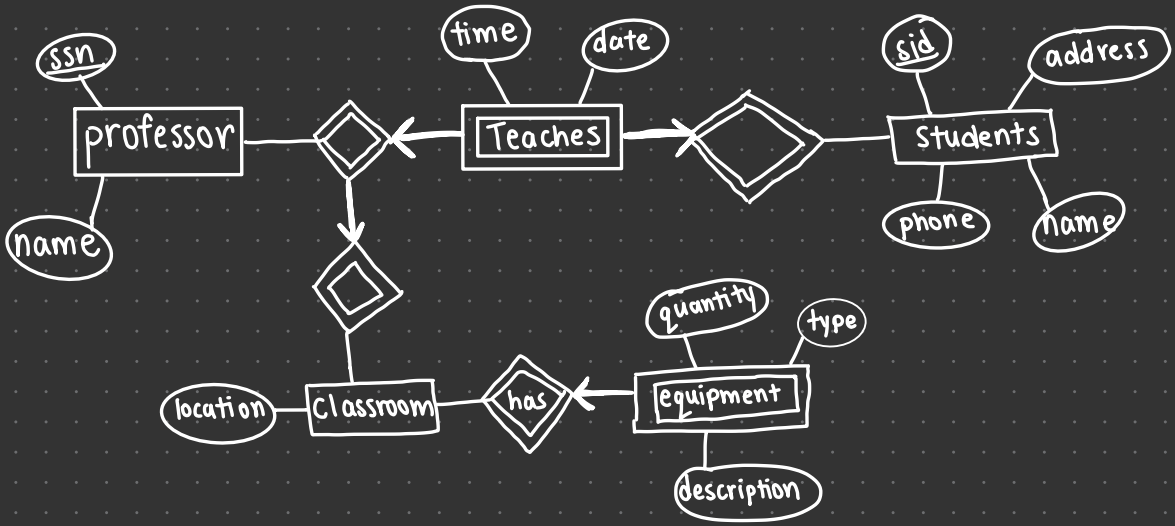
outPatient (id : int, checkback_date : date, primary key (id), foreign key (id) references Patient)

Room (RoomId : Varchar (10), primary key (Room_Id))

Bed (RoomId : varchar (10), bed# : int, isICU : boolean, primary key (Room_ID, bed #), foreign key (Room_ID) references Room)

resident Patient (id : int, Room_Id : varchar (10), bed # : int, discharge_date : date, primary key (id), foreign key (id) references Patient, foreign key (id) references Bed not null)

ER Diagram:

- **professor** (entity) with attributes: ssn, name
- **Teaches** (relationship) with attributes: time, date
- **Students** (entity) with attributes: sid, address, phone, name
- **Classroom** (entity) with attribute: location
- **has** (relationship)
- **equipment** (entity) with attributes: quantity, type, description

Question 5:

a) When you use the instruction, delete from table company where cid = 2, so, $(cid, id) = (2, 17)$, then you will receive an error message saying that you cannot delete because the child table means that the company table is referred by the Department table. And, so there is and will be no effect on the corporation table.

b) question is asking about corporation table id = 15. When this is deleted, then in company table $(cid, id) \Rightarrow$

$(1, 15)$, $(3, 15)$, and $(5, 15)$ are deleted.

↓

So, after this you are left with :

corporation table

id
17
20

company table

cid	id
2	17
4	20

from company table

And, since rows $(1,15)$, $(3,15)$, and $(5,15)$ are deleted then the rows in the department for $(1,1)$, $(4,3)$, $(5,5)$, $(6,11)$, $(7,3)$, $(8,3)$, $(9,1)$, $(12,5)$ are deleted.

form (did, cid)

$(6,17)$
$\wedge$

$(2,17)$

C) When we update company set cid = 6 where cid = 2, so therefore, wherever 2 is a cid in the department would be updated with NULL instead.