Kids Crew - A Child Care Service

Milestone: Logical Model

Group 11
Student1 Sharayu Thosar
Student2 Pranjali Bhatt

602-849-3746 (Tel of Student 1)
908-340-2087 (Tel of Student 2)

thosar.sh@northeastern.edu
bhatt.pranj@northeastern.edu

Percentage of Effort Contributed by Student1: 50%
Percentage of Effort Contributed by Student2: 50%

Signature of Student 1: Sharayu Thosar
Signature of Student 2: Pranjali Bhatt

Submission Date: October 22nd, 2022

BankDetails(*ID*, routing_num, acc_num)
- ID is a foregin key. It refers to the primary key PID of Parent or BID in Babysitter;NOT NULL

Parent(PID, occupation, acc_num, name, phone_no, HNum, street,zip,city)
- PID is the primary key

Babysitter(BID,acc_num, name, phone_no, HNum, street,zip,city, bio, availability,*PID*)
- BID is primary key
- Acc_num is a foreign key referring to ac_num in BankDetails;NOT NULL
- PID is foreign key referring to PID in Parent for the relation Pays;NOT NULL

ServiceType(*BID*,SID, Service)
- BID is a foreign key referring to BID in Babysitter ;NOT NULL
- SID, BID is the primary key

Experience(*BID*, hrs_logged_infants, hrs_logged_toddlers, hrs_logged_children, rating, rate, *PID*)
- PID is a foreign key referring to PID in Parent for relation gives rating;NOT NULL
- Experience is a weak entity. It refers to the BID in Babysitter. BID is the primary and foreign key

Client(PID,*BID, SID*, Name)
- PID, Name is primary key as it comes under aggregation of Parent and Children
- BID is a foreign key referring to BID in Babysitter;NOT NULL
- SID is foreign key referencing to SID in ServiceType as client books relation;NOT NULL

PickupDropOff(*BID*, license_no, pickup_loc, drop_off_loc)
- BID is the primary key
- BID is a foreign key referring to BID in Babysitter;NOT NULL
- License_no, BID are candidate keys

Book(*SID*, date, time, *BID*)
- SID is foreign key referencing to SID ;NOT NULL
- BID is a foreign key referring to BID in Babysitter.;NOT NULL
- BID,SID is primary key

Babysitting(hourly_rate,*BID*)
- BID is primary key
- BID is a foreign key referring to BID in Babysitter;NOT NULL

Parent(PID, occupation, acc_num, name, phone_no, HNum, street,zip,city)
- PID is the primary key

Children(Name, age_group, *PID,BID*)
- PID and Name is the primary key
- Children Entity is a weak entity. PID is a foreign key referring to Parent for registers relation;NOT NULL
- Name is included as a parent can have multiple children
- BID is foreign key referring to BID in Babysitter for assigned relation;NOT NULL

Summary
- The relational model has 11 relations.
- To implement the EER specializations all subclasses have been mapped by creating separate relations for each. For the person specialization we created a relation for each subclass. A new relation called BankDetails is created for normalization. Superclass attribute types are included in each subclass.
- For services specialization each subclass has a separate relation. A new relation called book is created which refers to services entity type. A foreign key is introduced 'SID' to enforce the "provides" relation.
- Children relation is a weak entity type hence PID is a foreign key referring to Parent for registers relation. Parent and Children relations are aggregated by the Client relation.
- Experience is a weak entity. It refers to the BID in Babysitter relation.
- In the Babysitter relation Services is a multivalued attribute type. To map it a new relation called ServiceType is created. SID is a new primary key introduced to uniquely identify the service.
- The relations PAYS, GIVES RATING, BOOKS, PROVIDES are one to one relations that have been mapped. ASSIGNED and REGISTERS relations are one to many type of relations and foregin keys have been introduced accordingly.

Loss of semantics
- Rate is calculated from hours logged.
- Date in services is for the booking date.
- Availability is the time for the next day. After a client selects a service PickupDropOff and Babysitting relations get updated.