```
Homework 3
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Ethan Meltzer
I have adhered to the Honor Code on this assignment.
1.
   (a) author, name
       publisher, name
       customer, email
       shopping_basket, basket_id
       book, ISBN
       warehouse, code
  (b)
```

m contains

customer_id int(11)

create table options

3.

2.

⊞ customer

address varchar(256)

```
📭 basket_id
                                                                        m contains
                                                email varchar(256)
                                                                      [ isbn
                                              basket_id int(11)
                                                                      basket_id int(11)
                                                                      number int(11)
                                                m customer
                                             □ name
                       m stocks
                                             ☐ address varchar(256)
                     [ isbn

  □ phone

                     [ code
                                             email.
                     number int(11)
                     disc_id int(11)
                                                                ⊞ book
            ⊞ bluray
                                m warehouse

    □ title varchar(256)

         video_id int(11)
                             ■ address varchar(256)
                                                            □ price
                             □ phone
                                                            □ price
         disc_id int(11)
                             <u></u> code
                                                            <u>∏</u> isbn
            ⊞ video
                                                Ⅲ written_by

    □ published_by

    title

       ☐ creator varchar(256)
       □ price
                                              [ isbn
                                                                        [ isbn
       📭 video_id
                                                  m author
                                                                          m publisher
                                             ■ address varchar(256)
                                                                      ■ address varchar(256)
                                             □ url

  □ phone

                                                                      □ url
                                             📭 name
                                                                      📭 name
(c)
                   ⊞ basket_of
                                                                                ⊞ author
```

⊞ item basket_id int(11) item_id int(11) m publisher **⊞** bluray creator varchar(256 □ price disc_id int(11) ⊞ book **⊞** stocks m published_by title varchar(256) 📭 isbn m warehouse ■ phone int(11) **⊞** dealer name ■ location varchar(256) 📭 dealer_id m owns **m** stocks

dealer_id int(11)

```
📭 dealer_id
                           vin varchar(17)
   দ্দি vin
     Ⅲ customer
                                      ⊞ car
                                                           m has_option
   name varchar(256)
                                  model_id int(11)
                                                           option_id int(11)
   customer_id int(11)
                                                           vin varchar(17)
                                  vin varchar(17)
                                    Ⅲ model
                                                             m options
           ⊞ brand
                                                         model_id
                                 brand_id
       ■ name varchar(256)
                                ■ name varchar(256)
                                                         name varchar(256)
                                                         description
                                🔽 brand_id
                                                         🔙 option_id
                                <u>∏</u> model_id
Below is the list of SQL commands used to generate the above ER diagram. The DDL
contains both relationship schema as well as primary and foreign key constraints.
use car_dealer;
create table brand
(
   brand_id int primary key,
   name varchar(256)
);
create table model
(
   model_id int primary key,
   brand_id int,
   name
         varchar(256),
   year
            int,
   foreign key (brand_id) references brand (brand_id)
);
```

```
option_id int primary key,
    model_id int,
               varchar(256),
    description text,
    foreign key (model_id) references model (model_id)
);
create table dealer
(
    dealer_id int primary key,
    name varchar(256),
    location varchar(256)
);
create table customer
    customer_id int primary key,
         varchar(256)
);
create table car
            varchar(17) primary key,
    model_id int,
    foreign key (model_id) references model (model_id)
);
create table stocks
    dealer_id int,
    vin varchar(17) primary key,
    foreign key (dealer_id) references dealer (dealer_id),
    foreign key (vin) references car (vin)
);
create table owns
    customer_id int,
              varchar(17) primary key,
   dealer_id int,
    foreign key (customer_id) references customer (customer_id),
    foreign key (vin) references car (vin),
    foreign key (dealer_id) references dealer (dealer_id)
);
create table has_option
(
             varchar(17) primary key,
    option_id int,
    foreign key (vin) references car (vin),
    foreign key (option_id) references options (option_id)
);
                                     ⊞ album
                    ⊞ song
                                                      □ name

⊞ genre

                 □ length
                                □ art
                                <u></u> album_id
     m song_has_genre

⊞ song_in_album

                                             ⊞ role
create table album
(
    album_id
                 int primary key,
                 varchar(256),
    name
                 enum ('single', 'EP', 'LP'),
    type
    art
                 blob,
    release_date date
);
create table song
(
```

```
⊞ person ⊞ ensemble
                                                                 ☐ founding_date date
                                                                 m person_in_ensemble
    song_id int primary key,
    name varchar(256),
    # length in seconds
    length int,
    streams int
);
create table genre
    genre_id int primary key,
    title varchar(256)
);
create table person
(
    person_id int primary key,
    name
            varchar(256),
    birthday date
);
create table ensemble
(
                  int primary key,
    ensemble_id
                  varchar(256),
    founding_date date
);
create table entity
(
              int primary key,
    entity_id
    person_id int,
    ensemble_id int,
    foreign key (person id) references person (person id),
    foreign key (ensemble_id) references ensemble (ensemble_id)
);
# A song can be in many albums
create table song_in_album
    song_id int,
    album_id int,
    foreign key (song_id) references song (song_id),
    foreign key (album_id) references album (album_id),
    primary key (song_id, album_id)
# Genres for album are generated from the list of genres associated with songs
# in the album
create table song_has_genre
    song_id int,
    genre_id int,
    foreign key (song_id) references song (song_id),
    foreign key (genre_id) references genre (genre_id),
    primary key (song_id, genre_id)
);
create table person_in_ensemble
(
   person_id int,
    ensemble_id int,
    foreign key (person_id) references person (person_id),
    foreign key (ensemble_id) references ensemble (ensemble_id),
    primary key (person_id, ensemble_id)
);
create table role
    entity_id int,
    song_id int,
```

foreign key (entity_id) references entity (entity_id), foreign key (song_id) references song (song_id),

primary key (entity_id, song_id)

)