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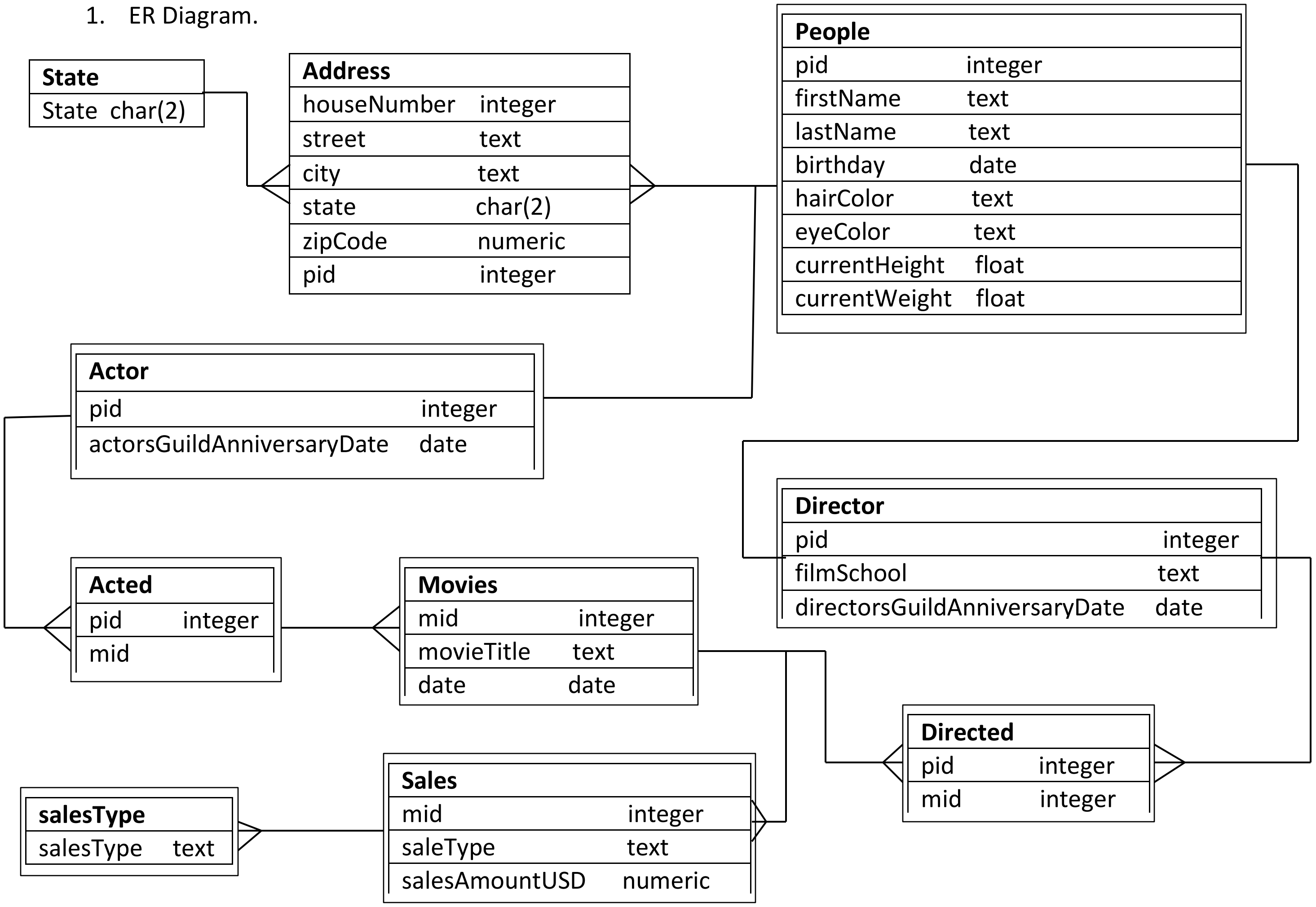
Normalization Homework #2

1. ER Diagram.



State
State char(2)

Address	
houseNumber	integer
street	text
city	text
state	char(2)
zipCode	numeric
pid	integer

People	
pid	integer
firstName	text
lastName	text
birthday	date
hairColor	text
eyeColor	text
currentHeight	float
currentWeight	float

Actor	
pid	integer
actorsGuildAnniversaryDate	date

Director	
pid	integer
filmSchool	text
directorsGuildAnniversaryDate	date

Acted	
pid	integer
mid	

Movies	
mid	integer
movieTitle	text
date	date

Directed	
pid	integer
mid	integer

salesType	
salesType	text

Sales	
mid	integer
saleType	text
salesAmountUSD	numeric

2. Create Statements

```
--State
drop table if exists states
create table states(
        state   char(2)  not null,
primary key(state)
);

--Address

drop table if exists addresses
create table addresses(
        houseNumber             integer not null,
        street                  text not null,
        city                    text not null,
        state                   char(2) not null references states(state),
        zipcode                 numeric not null,
        pid                     integer not null references people(pid),
primary key(streetNumber, street, city, state, zipcode)
);

--people
drop table if exists people
create table people(
        pid             integer not null,
        firstName       text,
        lastName        text,
        birthday        date,
        hairColor       text,
        eyeColor        text,
        currentHeight float,
        currentweight float,
primary key(pid)
);

--actor
drop table if exists actors
create table actors(
        pid                             integer not null references people(pid),
        actorsGuildAnniversaryDate   date,
primary key(pid)
);


--director
```

```
drop table if exists directors
create table directors(
        pid                               integer not null references people(pid),
        directorsGuildAnniversaryDate     date,
primary key(pid)
);

--movies
drop table if exists movies
create table movies(
        mid             integer not null,
        movieTitle      text not null,
        dateReleased    date not null,
primary key(mid)
);

--acted
drop table if exists acted
create table acted(
        pid     integer not null references actors(pid),
        mid     integer not null references movies(mid),
primary key(pid, mid)
);

--directed
drop table if exists directed
create table directed(
        pid     integer not null references directors(pid),
        mid     integer not null references movies(mid),
primary key(pid, mid)
);

--sales type
drop table if exists sales_types
create table sales_types(
        salesType       text not null,
primary key(salesType)
);


--sales
drop table if exists sales
create table sales(
        mid                     integer not null references movies(mid),
        salesType               text not null references sales_types(salesType),
        salesAmountUSD          numeric,
primary key(mid,salesType)

);
```

3. Insert Statements

```
        --Insert states
        insert into states(state)
        values('ME');
        insert into states(state)
        values('NY');
        insert into states(state)
        values('CA');
        insert into states(state)
        values('NJ');
        insert into states(state)
        values('PA');
        insert into states(state)
        values('FL');
        insert into states(state)
        values('TX');
        insert into states(state)
        values('RI');
        insert into states(state)
        values('MA');


--insert address
insert into addresses(houseNumber, street, city, state, zipcode, pid)
        values(107, 'bruce hill road', 'cumberland','ME',04021, 1);
insert into addresses(houseNumber, street, city, state, zipcode, pid)
        values(37, 'oak', 'new york','NY',13579, 2);
insert into addresses(houseNumber, street, city, state, zipcode, pid)
        values(56, 'elm', 'San Juan','CA',09054, 3);
insert into addresses(houseNumber, street, city, state, zipcode, pid)
        values(95, 'maple', 'wall','NJ',24689, 4);
insert into addresses(houseNumber, street, city, state, zipcode, pid)
        values(28, 'marshal', 'pittsburg','PA',04056, 5);




--insert people table
```

```
insert into people(pid, firstName, lastName, birthday, hairColor, eyeColor, currentHeight,
CurrentWeight)
        values(1, 'jason', 'statham', '06-25-1975', 'brown', 'hazel', 72, 185);
insert into people(pid, firstName, lastName, birthday, hairColor, eyeColor, currentHeight,
currentWeight)
        values(2, 'al', 'pacino', '10-11-1945', 'black', 'brown', 67, 170);
insert into people(pid, firstName, lastName, birthday, hairColor, eyeColor, currentHeight,
currentWeight)
        values(3, 'mark', 'wahlberg', '06-09-1982', 'brown', 'brown', 66, 190);
insert into people(pid, firstName, lastName, birthday, hairColor, eyeColor, currentHeight,
currentWeight)
        values(4, 'bruce', 'lee', '02-24-1959', 'brown', 'brown', 70, 155);
insert into people(pid, firstName, lastName, birthday, hairColor, eyeColor, currentHeight,
currentWeight)
        values(5, 'dwayne', 'johnson', '6-25-1977', 'brown', 'brown', 74, 275);
insert into people(pid, firstName, lastName, birthday, hairColor, eyeColor, currentHeight,
currentWeight)
        values(6, 'sean', 'connery', '05-14-1931', 'grey', 'brown', 68, 1650);
insert into people(pid, firstName, lastName, birthday, hairColor, eyeColor, currentHeight,
currentWeight)
        values(7, 'rick', 'moranis', '06-20-1960', 'brown', 'blue', 65, 150);


--insert actor
insert into actors(pid, actorsGuildAnniversaryDate)
        values(4, '12-23-1992');
insert into actors(pid, actorsGuildAnniversaryDate)
        values(5, '01-16-2007');
insert into actors(pid, actorsGuildAnniversaryDate)
        values(1, '10-31-1998');
insert into actors(pid, actorsGuildAnniversaryDate)
        values(3, '7-5-1984');


--insert director
insert into directors(pid, directorsGuildAnniversaryDate)
```

```
        values(5,’LSU’, '01-21-2005');
insert into directors(pid, directorsGuildAnniversaryDate)
        values(4, ‘UCLA’,'6-2-1998');
insert into directors(pid, filmSchool, directorsGuildAnniversaryDate)
        values(3, 'UMaine', '10-29-2003');
insert into directors(pid, filmSchool, directorsGuildAnniversaryDate)
        values(2, 'Marist', '13-21-2005');
insert into directors(pid, filmSchool, directorsGuildAnniversaryDate)
        values(1, 'UCONN', '9-13-1976');


-- insert movies
insert into movies(mid, movieTitle, dateReleased)
        values(1,'Crank', '06-08-2007');
insert into movies(mid, movieTitle, dateReleased)
        values(2,'scarface', '03-20-1985');
insert into movies(mid, movieTitle, dateReleased)
        values(3,'sniper', '9-19-2005');
insert into movies(mid, movieTitle, dateReleased)
        values(4,'Man with the iron fists', '07-13-1975');


--insert acted table
insert into acted(pid, mid)
        values(3, 3);
insert into acted(pid, mid)
        values(1, 1);
insert into acted(pid, mid)
        values(2, 2);
insert into acted(pid, mid)
        values(4, 4);


--directed table
insert into directed(pid, mid)
        values(3, 1);
insert into directed(pid, mid)
        values(2, 4);
insert into directed(pid, mid)
        values(1, 3);
insert into directed(pid, mid)
        values(4, 2);

--insert sales type table
insert into sales_types(salesType)
```

```
        values('domestic box office sales');
insert into sales_types(salesType)
        values('foreign box office sales');
insert into sales_types(salesType)
        values('dvd sales');
insert into sales_types(salesType)
        values('blu-ray sales');


--insert sales table
insert into sales(mid, salesType, salesAmountUSD)
        values(1, 'domestic box office sales', 500000000);
insert into sales(mid, salesType, salesAmountUSD)
        values(1, 'foreign box office sales', 9000000);
insert into sales(mid, salesType, salesAmountUSD)
        values(1, 'dvd sales', 1250000);
insert into sales(mid, salesType, salesAmountUSD)
        values(1, 'blu-ray sales', 955000);
insert into sales(mid, salesType, salesAmountUSD)
        values(2, 'domestic box office sales', 70000000);
insert into sales(mid, salesType, salesAmountUSD)
        values(3, 'foreign box office sales', 60000000);
insert into sales(mid, salesType, salesAmountUSD)
        values(2, 'dvd sales', 780000);
insert into sales(mid, salesType, salesAmountUSD)
        values(3, 'blu-ray sales', 5650000);
insert into sales(mid, salesType, salesAmountUSD)
        values(4, 'domestic box office sales', 30050000);
```

4. Functional dependencies for each table
State: state →
Address: (streetNumber, street, city, state, zipcode) → pid

People: pid → firstName, lastName, birthday, hairColor, eyeColor, currentHeight, currentWeight
Actor: pid → actorsGuildAnniversaryDate
Director: pid → filmSchool, directorsGuildAnniversaryDate
Movies: mid → movieTitle, dateReleased
Acted: (pid, mid) →
Directed: (pid, mid) →
SalesType: salesType →
Sales: (mid, salesType) → salesAmountUSD

5.Return the directors who ‘Sean Connery’ has acted for

```
SELECT p_directed.lastName, p_directed.firstName
FROM movies m,
directed d,
people p_acted,
people p_directed,
acted a
WHERE m.mid = d.mid
AND d.pid = p_directed.pid
AND a.pid = p_acted.pid
AND a.mid = m.mid
AND (p_acted.lastName = 'connery'

AND p_acted.firstName = 'sean');
```