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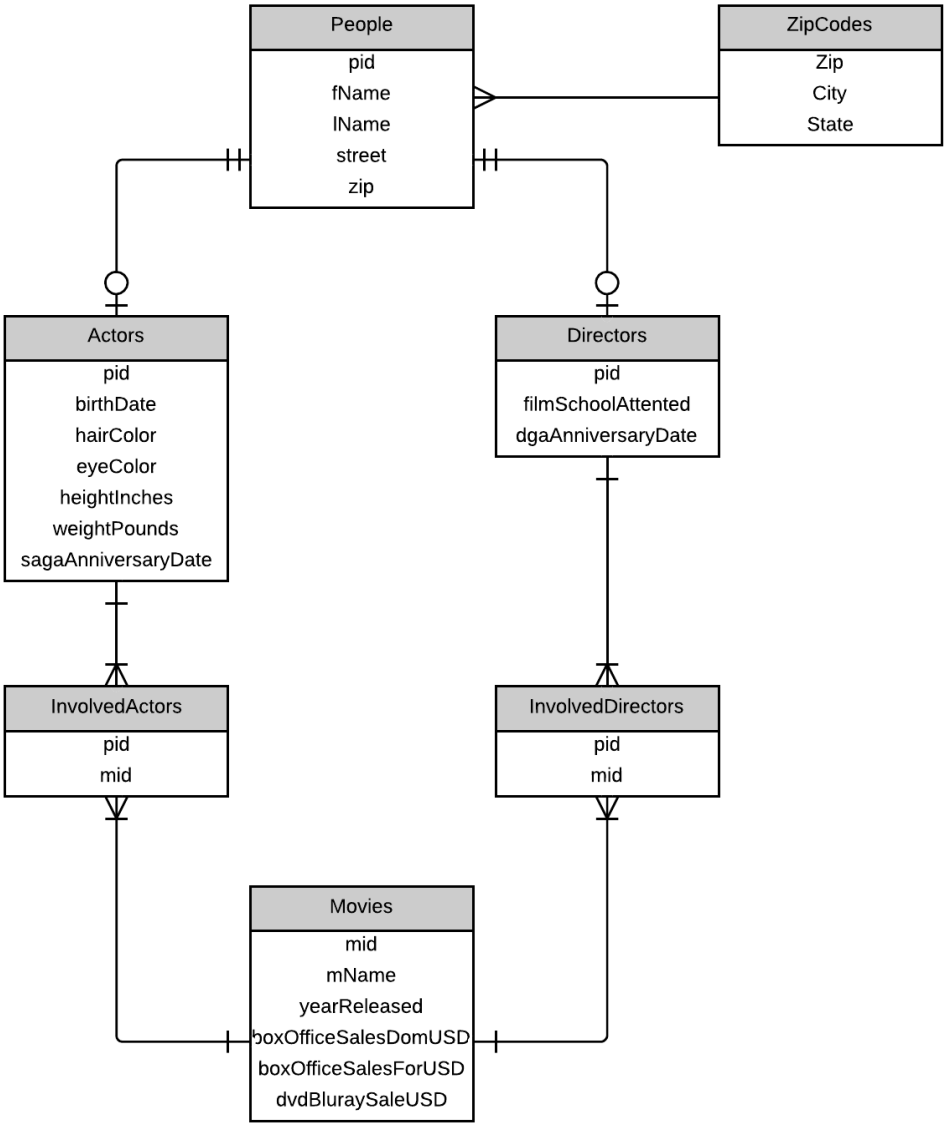
Lab 8

1. E/R diagram



2. SQL create statements

```
DROP TABLE IF EXISTS people CASCADE;
DROP TABLE IF EXISTS actors;
DROP TABLE IF EXISTS directors;
DROP TABLE IF EXISTS involvedActors;
DROP TABLE IF EXISTS involvedDirectors;
DROP TABLE IF EXISTS movies;
```

```
DROP TABLE IF EXISTS zipCodes;


-- ZipCodes --
CREATE TABLE zipCodes (
  zip    integer not null,
  city   text,
  state  text,
 primary key(zip)
);

-- People --
CREATE TABLE people (
  pid       integer not null,
  fname     text,
  lname     text,
  street    text,
  zip       integer references zipCodes(zip),
 primary key(pid)
);

-- Actors --
CREATE TABLE actors (
  pid                 integer not null references people(pid),
  birthDate           date,
  hairColor           text,
  eyeColor            text,
  heightInches        decimal(5,2),
  weightPounds        decimal(5,2),
  sagaAnniversaryDate  date,
 primary key(pid)
);

-- Directors --
CREATE TABLE directors (
  pid                 integer not null references people(pid),
  filmSchoolAttented   text,
  dgaAnniversaryDate   date,
 primary key(pid)
);

-- Movies --
CREATE TABLE movies (
  mid                   integer not null,
  mName                 text,
  yearReleased          integer,
  eyeColor              text,
  boxOfficeSalesDomUSD   numeric(12,2),
```

```
  boxOfficeSalesForUSD   numeric(12,2),
  dvdBluraySaleUSD       numeric(12,2),
 primary key(mid)
);

-- InvolvedActors --
CREATE TABLE involvedDirectors (
  pid   integer not null references people(pid),
  mid   integer not null references movies(mid),
 primary key(pid, mid)
);

-- InvolvedDirectors --
CREATE TABLE involvedActors (
  pid   integer not null references people(pid),
  mid   integer not null references movies(mid),
 primary key(pid, mid)
);
```

3. SQL insert statements

```
--Inserts

-- ZipCodes --
INSERT INTO zipCodes( zip, city, state )
  VALUES(11111, 'New Town', 'StateA');

INSERT INTO zipCodes( zip, city, state )
  VALUES(22222, 'Old Town', 'StateB');

-- People --
INSERT INTO people( pid, fname, lname, street, zip )
  VALUES(001, 'Sean', 'Connery', 'Main', 11111);

INSERT INTO people( pid, fname, lname, street, zip )
  VALUES(002, 'Steven', 'Spielberg', 'Main', 11111);

INSERT INTO people( pid, fname, lname, street, zip )
  VALUES(003, 'Guy', 'Hamilton', 'Main', 11111);

INSERT INTO people( pid, fname, lname, street, zip )
  VALUES(004, 'James', 'Cameron', 'Main', 11111);

INSERT INTO people( pid, fname, lname, street, zip )
  VALUES(005, 'John', 'Boorman', 'Main', 11111);

-- Actors --
```

```
INSERT INTO actors( pid, birthDate, hairColor, eyeColor, heightInches,
weightPounds, sagaAnniversaryDate )
  VALUES(001, '1930-08-25', 'Gray', 'Brown', 10.00, 10.00, '1990-01-01');

-- Directors --
INSERT INTO directors( pid, filmSchoolAttented, dgaAnniversaryDate )
  VALUES(002, 'School', '1990-01-01');

INSERT INTO directors( pid, filmSchoolAttented, dgaAnniversaryDate )
  VALUES(003, 'School', '1990-01-01');

INSERT INTO directors( pid, filmSchoolAttented, dgaAnniversaryDate )
  VALUES(004, 'School', '1990-01-01');

INSERT INTO directors( pid, filmSchoolAttented, dgaAnniversaryDate )
  VALUES(005, 'School', '1990-01-01');

-- Movies --
INSERT INTO movies( mid, mName, yearReleased, boxOfficeSalesDomUSD,
boxOfficeSalesForUSD, dvdBluraySaleUSD )
  VALUES(101, 'Goldfinger', 1964, 10.00, 10.00, 10.00);

INSERT INTO movies( mid, mName, yearReleased, boxOfficeSalesDomUSD,
boxOfficeSalesForUSD, dvdBluraySaleUSD )
  VALUES(102, 'Indiana Jones and the Last Crusade', 1964, 10.00, 10.00,
10.00);

INSERT INTO movies( mid, mName, yearReleased, boxOfficeSalesDomUSD,
boxOfficeSalesForUSD, dvdBluraySaleUSD )
  VALUES(103, 'The Terminator', 1964, 10.00, 10.00, 10.00);

INSERT INTO movies( mid, mName, yearReleased, boxOfficeSalesDomUSD,
boxOfficeSalesForUSD, dvdBluraySaleUSD )
  VALUES(104, 'Zardoz', 1964, 10.00, 10.00, 10.00);

-- InvolvedActors --
INSERT INTO involvedActors( pid, mid )
  VALUES(001, 101);

INSERT INTO involvedActors( pid, mid )
  VALUES(001, 102);

INSERT INTO involvedActors( pid, mid )
  VALUES(001, 104);

-- InvolvedDirectors --
INSERT INTO involvedDirectors( pid, mid )
  VALUES(002, 102);
```

```
INSERT INTO involvedDirectors( pid, mid )
  VALUES(003, 101);

INSERT INTO involvedDirectors( pid, mid )
  VALUES(004, 103);

INSERT INTO involvedDirectors( pid, mid )
  VALUES(005, 104);
```

4. Functional Dependencies

people: pid → fname, lname, street, zip
actors: pid → birthDate, hairColor, eyeColor, heightInches, weightPounds, sagaAnniversaryDate
directors: pid → filmSchoolAttented, dgaAnniversaryDate
movies: mid → mName, yearReleased, boxOfficeSalesDomUSD, boxOfficeSalesForUSD, dvdBluraySaleUSD
involvedActors: pid, mid →
involvedDirectors: pid, mid →
zipCodes: zip → city, state

5. SQL query

```
select distinct fname, lname
from people
where pid in(
            select pid
            from involvedDirectors
            where mid in(
                        select mid
                        from involvedActors
                        where pid in(
                                    select pid
                                    from people
                                    where fname = 'Sean'
                                      and lname = 'Connery')));
```