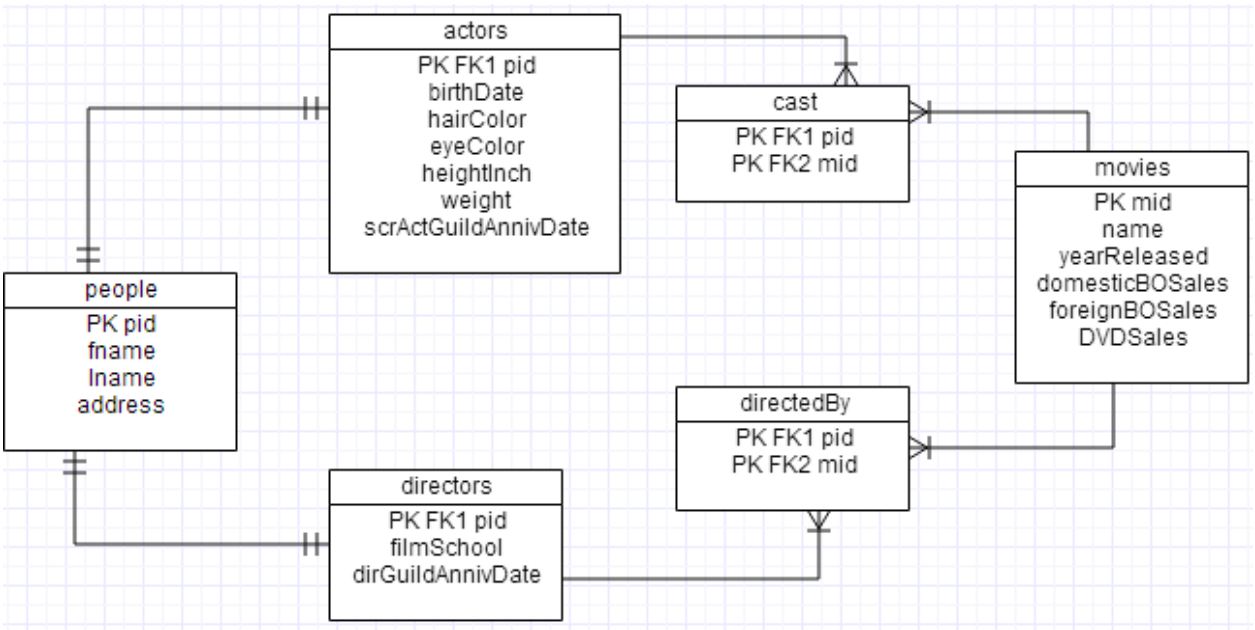
Kenneth Brooks
Database Systems
Normalization #2

ER Diagram




```
 --People Table
CREATE TABLE people(
pid         INT   NOT NULL,
fname       TEXT  NOT NULL,
lname       TEXT  NOT NULL,
address     TEXT  NOT NULL,
PRIMARY KEY(pid)
);

--Actors table
CREATE TABLE actors(
pid                  NT    NOT NULL references people(pid),
birthDate            DATE  NOT NULL,
hairColor            TEXT  NOT NULL,
eyeColor             TEXT  NOT NULL,
heightInch           INT   NOT NULL,
weight               INT   NOT NULL,
scrActGuildAnnivDate DATE  NOT NULL,
PRIMARY KEY(pid)
);
```

```
--Directors table
CREATE TABLE directors(
pid                   INT NOT NULL references people(pid),
filmSchool            TEXT NOT NULL,
dirGuildAnnivDate     DATE NOT NULL,
PRIMARY KEY(pid)
);

--Movies table
CREATE TABLE movies(
mid              INT        NOT NULL,
name             TEXT       NOT NULL,
yearReleased     INT        NOT NULL,
domesticBOSales  DECIMAL    NOT NULL,
foreignBOSales   DECIMAL    NOT NULL,
DVDSales         DECIMAL    NOT NULL,
PRIMARY KEY(mid)
);

--Cast Table
CREATE TABLE cast(
pid   INT   NOT NULL references actors(pid),
mid   INT   NOT NULL references movies(mid),
PRIMARY KEY(pid, mid)
);

--DirectedBy table
CREATE TABLE directedBy(
pid   INT   NOT NULL references directors(pid),
mid   INT   NOT NULL references movies(mid),
PRIMARY KEY(pid, mid)
);
```

SQL Insert Statements for test data

```
INSERT INTO people (pid, fname, lname, address)
VALUES     (001, 'Pierce, 'Brosnan, 'New York, NY'),
           (002, 'Sean', 'Connery', '007 Ocean Dr Los Angeles CA'),
           (003, 'Jennifer', 'Lawrence', 'Hollywood, CA'),
-----------(004, 'Harrison, 'Ford, 'Poughkeepsie, NY'),
           (005, 'Mark', 'Wahlberg', 'Honolulu, HI'),
           (006, 'Heath', 'Ledger', 'Perth, Australia'),
           (007, 'Terence', 'Young', 'Phoenix, AZ'),
           (008, 'Irvin', 'Kershner', 'Dover, DE'),
           (009, 'Lewis', 'Gilbert', 'Albany, NY'),
           (010, 'Gary', 'Ross', 'Columbia, SC'),
           (011, 'David', 'Russell', 'Austin, TX'),
           (012, 'Antoine', 'Fuqua', 'Santa Fe, NM');

INSERT INTO actors(pid, birthdate, hairColor, eyeColor, heightInch,
weight, scrActGuildAnnivDate)
VALUES (002, '08/25/1930', 'brown', 'brown', 68, 180, '05/25/1960'),
(003, '08/15/1990', 'brown', 'blue', 70, 110, '10/03/2011'),
```

```
(004, '01/05/1975', 'brown', 'blue', 73, 200, '01/02/2008'),
(005, '06/05/1971', 'brown', 'brown', 68, 220, '03/19/2002'),
(006, '04/04/1979', 'blonde', 'brown', 73, 223, '11/01/2000');
```

```
INSERT INTO directors(pid, filmSchool, dirGuildAnnivDate)
VALUES (001, 'Harvard', '02/02/2002'),
(007, 'Yale', '04/15/1961'),
(008, 'Columbia', '02/13/1969'),
(009, 'Marist', '12/22/1998'),
(010, 'Molloy', '12/01/2009'),
(011, 'Loyola', '11/11/2011'),
(012, 'FIT', '09/07/2002');
INSERT INTO movies(mid, name, yearReleased, domesticBOSales,
foreignBOSales, DVDSales)
VALUES (001, 'From Russia With Love', 1960, 2000000.00, 1000000.00,
9000.00),
(002, 'Never Say Never Again', 1970, 1800000.00, 1600000.00,
32000.00),
(003, 'You Only Live Twice', 1980, 900000.00, 2000000.00, 6500.00),
(004, 'Hunger Games', 2012, 1800000.00, 1900000.00, 7200.00),
(005, 'Silver Linings Playbook', 2013, 1600000.00, 1400000.00,
9100.00),
(006, 'Shooter', 2000, 3400000.00, 9900000.00, 8000.00),
(007, 'The Dark Knight', 2009, 5800000.00, 4300000.00, 30000.00);
INSERT INTO cast(pid, mid)
VALUES (002, 001),
(002, 002),
(002, 003),
(003, 004),
(003, 005),
(004, 005),
(005, 006),
(006, 007);
INSERT INTO directedBy(pid, mid)
VALUES (007, 001),
(008, 002),
(009, 003),
(010, 004),
(011, 005),
(011, 005),
(012, 006),
(001, 007);
```

Functional Dependencies for each table

People table

pid -> fname, lname, address

Actors table

pid -> birthDate, hairColor, eyeColor, heightInch, weight, scrActGuildAnnivDate

Directors table

pid -> filmSchool, dirGuildAnnivDate

Movies table

mid -> name, yearReleased, domesticBOSales, foreignBOSales, DVDSales

Cast table

(pid, mid) ->
DirectedBy table
(pid, mid) ->

SQL Query

Return all the directors with whom actor "Sean Connery" has worked.

```
SELECT DISTINCT pdirect.fname,
pdirect.lname
FROM people pactor,
people pdirect,
actors a,
directors d,
movies m,
cast c,
directedBy db
WHERE pactor.pid = a.pid
AND mc.pid = a.pid
AND c.mid = m.mid
AND db.mid = m.mid
AND db.pid = d.pid
AND d.pid = pdirect.pid
AND pactor.fname = 'Sean'
AND pactor.lname = 'Connery';
```