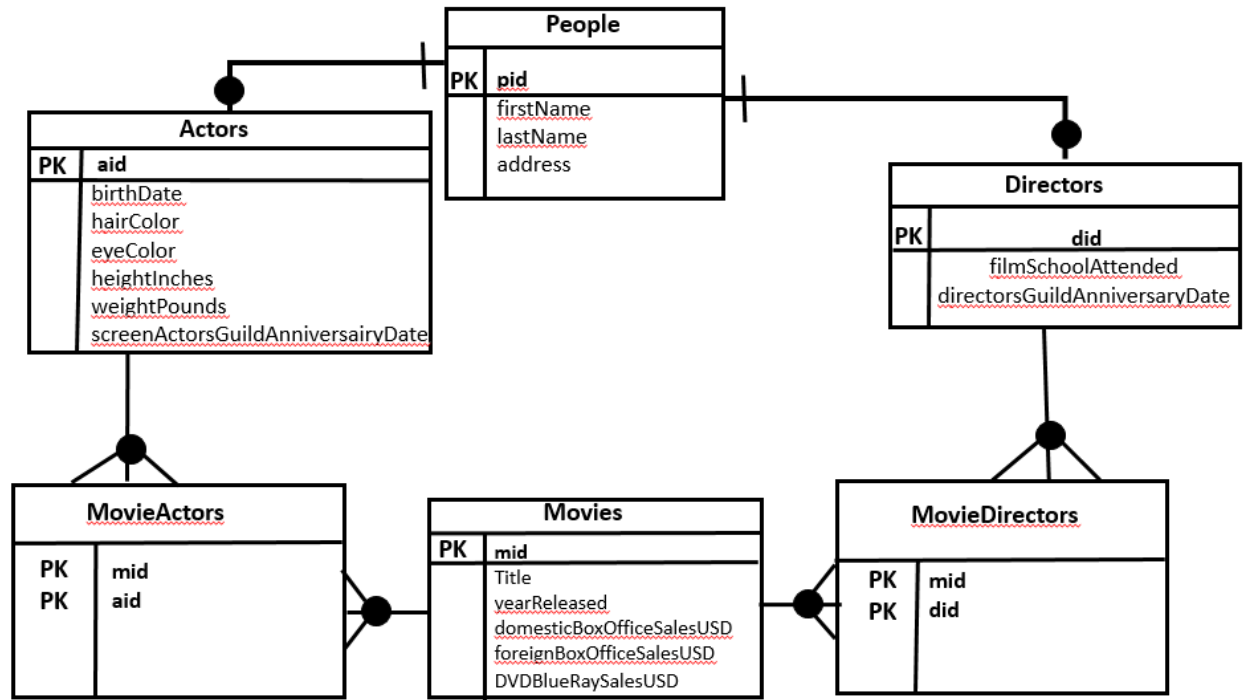1) E/R Diagram

--Question2 : Creating Tables --

DROP TABLE IF EXISTS People;

DROP TABLE IF EXISTS Directors;

DROP TABLE IF EXISTS Actors;

DROP TABLE IF EXISTS Movies;

DROP TABLE IF EXISTS MovieDirectors;

DROP TABLE IF EXISTS MovieActors;

--People--

CREATE TABLE People(

pid char(4) NOT NULL,

firstName VARCHAR(30) NOT NULL,

lastName VARCHAR(30) NOT NULL,

address varchar(120),

primary key (pid)

);

```sql
-- Directors --
CREATE TABLE Directors (
 did char(4) references People(pid),
 filmSchoolAttended text,
 directorsGuildAnniversairyDate date,
 primary key(did)
);
--Actors--
CREATE TABLE Actors (
 aid char(4) references People(pid),
 birthDate date,
 hairColor text,
 eyeColor text,
 heightInches int,
 weightPounds int,
 screenActorsGuildAnniversairyDate date,
primary key(aid)
);
--Movies--
CREATE TABLE Movies (
 mid char(4) NOT NULL,
 Title varchar(40)NOT NULL,
 yearReleased int NOT NULL,
 domesticBoxOfficeSalesUSD numeric,
 foreignBoxOfficeSalesUSD numeric,
 DVDBluraySalesUSD numeric,
 primary key(mid)
);
```

```sql
--MovieDirectors--

CREATE TABLE MovieDirectors(

mid char(4) references Movies(mid),

did char(4) references Directors(did),

primary key (mid, did)

);


--MovieActors--

CREATE TABLE MovieActors(

mid char(4) references Movies(mid),

aid char(4) references Actors(aid),

primary key (mid, aid)

);
--Question3 : Inserting data into the tables--
--People--
INSERT INTO People(pid, firstName, lastName, address)
VALUES ('p01', 'Michael', 'Jayston', '2881 Rd, Nottinghamshire, England, UK');
INSERT INTO People(pid, firstName, lastName, address)
VALUES('p02', 'Pierce', 'Brosnan', '125 St, County Louth, Ireland');
INSERT INTO People(pid, firstName, lastName, address)
VALUES('p03', 'Toby', 'Stephens', '3299 St, London, England, UK');
INSERT INTO People(pid, firstName, lastName, address)
VALUES('p04', 'Timothy', 'Dalton', '121 Rd, Denbighshire, Wales, UK');
INSERT INTO People(pid, firstName, lastName, address)
VALUES('p05', 'Sean', 'Connery',  '331 Ron St, Edinburgh, Scotland, UK');


--Directors--
INSERT INTO Directors(did, filmSchoolAttended, directorsGuildAnniversairyDate)
VALUES('p01', 'University of Carolina', '01/19/1976');
```

INSERT INTO Directors(did, filmSchoolAttended, directorsGuildAnniversairyDate)

VALUES('p02', 'University of Florida', '08/30/1982');

INSERT INTO Directors(did, filmSchoolAttended, directorsGuildAnniversairyDate)

VALUES('p03', 'Oxford University', '04/04/1994');

--Actors--

INSERT INTO Actors(aid, birthDate, hairColor, eyeColor, heightInches, weightPounds,

 screenActorsGuildAnniversairyDate)

VALUES('p01', '04-26-1962', 'Black', 'Green', 72, 182, '09-27-1990');

INSERT INTO Actors(aid, birthDate, hairColor, eyeColor, heightInches, weightPounds,

 screenActorsGuildAnniversairyDate)

VALUES('p03', '01-03-1966', 'Brown', 'Blue', 75, 169, '07-29-1984');

INSERT INTO Actors(aid, birthDate, hairColor, eyeColor, heightInches, weightPounds,

 screenActorsGuildAnniversairyDate)

VALUES('p04', '11-17-1958', 'Black', 'Brown', 79, 198, '12-03-1998');

INSERT INTO Actors(aid, birthDate, hairColor, eyeColor, heightInches, weightPounds,

 screenActorsGuildAnniversairyDate)

VALUES('p05', '03-06-1969', 'Red', 'Green', 81, 179, '02-09-1994');

--Movies--

INSERT INTO Movies(mid, Title, yearReleased, domesticBoxOfficeSalesUSD, foreignBoxOfficeSalesUSD, DVDBluraySalesUSD)

VALUES('m01', 'Wrong Turn', 2003, 7600000.00, 4000000.00, 2500000.00);

INSERT INTO Movies(mid, Title, yearReleased, domesticBoxOfficeSalesUSD, foreignBoxOfficeSalesUSD, DVDBluraySalesUSD)

VALUES('m02', '47 Ronin', 2013, 78000000.00, 57000000.00, 67000000.00);

INSERT INTO Movies(mid, Title, yearReleased, domesticBoxOfficeSalesUSD, foreignBoxOfficeSalesUSD, DVDBluraySalesUSD)

VALUES('m03', 'Lord of the Rings', 2001, 129000000.00, 81000000.00, 94000000.00);

--MovieDirectors--

INSERT INTO MovieDirectors(mid, did)

VALUES('m01', 'p01');

INSERT INTO MovieDirectors(mid, did)

VALUES('m02', 'p02');

INSERT INTO MovieDirectors(mid, did)

VALUES('m02', 'p03');

INSERT INTO MovieDirectors(mid, did)

VALUES('m03', 'p03');

--MovieActors--

INSERT INTO MovieActors(mid, aid)

VALUES('m01', 'p04');

INSERT INTO MovieActors(mid, aid)

VALUES('m02', 'p01');

INSERT INTO MovieActors(mid, aid)

VALUES('m03', 'p03');

INSERT INTO MovieActors(mid, aid)

VALUES('m01', 'p05');

INSERT INTO MovieActors(mid, aid)

VALUES('m03', 'p05');

4) Functional dependencies for each table

People:

firstName and lastName depends on pid

address depends on pid

address depends on firstName and lastName

Movies:

Title depends on mid

yearReleased depends on mid

domesticBoxOfficeSalesUSD depends on mid

foreignBoxOfficeSalesUSD depends on mid

DVDBluraySalesUSD depends on mid

Actors:

birthDate depends on aid

hairColor depends on aid

eyeColor depends on aid

heightInches depends on aid

weightPounds depends on aid

screenActorsGuildAnniversairyDate

Directors:

filmSchoolAttended depends on did

directorsGuildAnniversairyDate depends on did

MovieActors:

mid and aid are the composite key for the table. No dependencies in this table.

MovieDirectors:

mid and did are the composite key for the table. No dependencies in this table.

5)

--Question5--

SELECT p.firstName, p.lastName

FROM People p

INNER JOIN Directors d

ON p.pid=d.did

INNER JOIN MovieDirectors md

ON md.did=d.did

INNER JOIN Movies m

ON m.mid=md.mid

```sql
WHERE md.mid IN (SELECT m.mid

                FROM People p

                INNER JOIN Actors a

                ON p.pid=a.aid

                INNER JOIN MovieActors ma

                ON ma.aid=a.aid

                INNER JOIN Movies m

                ON m.mid=ma.mid

                WHERE p.firstName = 'Sean'

                AND p.lastName = 'Connery'

                );
```