

## From E/R to Relations:

Movie (title, length, year, genre)

Score (title<sup>FK-Movie</sup>, score)

Star (sname, gender, birthday, nationality)

StarIn (title<sup>FK-Movie</sup>, sname<sup>FK-Star</sup>)

Director (dname, gender, birthday, nationality)

DirectedBy (title<sup>FK-Movie</sup>, dname<sup>FK-Director</sup>)

Studio (mname, location)

MadeBy (title<sup>FK-Movie</sup>, mname<sup>FK-Studio</sup>)

## SQL Schema:

```
CREATE TABLE Movie (  
    title CHAR(100) NOT NULL PRIMARY KEY,  
    length INT,  
    year INT,  
    genre CHAR(30)  
);  
  
CREATE TABLE Score (  
    title CHAR(100),  
    score FLOAT,  
    PRIMARY KEY (title, score),  
    FOREIGN KEY (title) REFERENCES Movie(title)  
);
```

```
CREATE TABLE Star (  
    sname CHAR(30) NOT NULL PRIMARY KEY,  
    gender CHAR(1) CHECK (gender IN ('F', 'M')),  
    birthday DATE,  
    nationality CHAR(20)  
);
```

```
CREATE TABLE StarIn (  
    title CHAR(100),  
    sname CHAR(30),  
    PRIMARY KEY (title, sname),  
    FOREIGN KEY (title) REFERENCES Movie(title),  
    FOREIGN KEY (sname) REFERENCES Star(sname)  
);
```

```
CREATE TABLE Director (  
    dname CHAR(30) NOT NULL PRIMARY KEY,  
    gender CHAR(1) CHECK (gender IN ('F', 'M')),  
    birthday DATE,  
    nationality CHAR(20)  
);
```

```
CREATE TABLE DirectedBy (  
    title CHAR(100),  
    dname CHAR(30),  
    PRIMARY KEY (title, dname),  
    FOREIGN KEY (title) REFERENCES Movie(title),  
    FOREIGN KEY (dname) REFERENCES Director(dname)  
);
```

```
CREATE TABLE Studio (  
    mname CHAR(30) NOT NULL PRIMARY KEY,  
    location CHAR(200)  
);
```

```
CREATE TABLE MadeBy (  
    title CHAR(100),  
    mname CHAR(30),  
    PRIMARY KEY (title, mname),  
    FOREIGN KEY (title) REFERENCES Movie(title),  
    FOREIGN KEY (mname) REFERENCES Studio(mname)  
);
```

### **Populate Table:**

```
INSERT INTO Movie  
VALUES ('The Prestige', 130, 2006, 'thriller'),  
('The Conjuring', 112, 2013, 'horror'),  
('Insidious', 102, 2010, 'horror'),  
('The Shining', 144, 1980, 'horror'),  
('Les Misérables', 158, 2012, 'musical drama'),  
('Interstellar', 169, 2014, 'sci-fi'),  
('The Notebook', 124, 2004, 'drama'),  
('Doctor Strange', 115, 2016, 'sci-fi'),  
('Ready Player One', 140, 2018, 'sci-fi'),  
('Silent Hill', 125, 2006, 'horror');
```

```
INSERT INTO Star  
VALUES ('Shelley Duvall', 'F', '1949-07-07', 'American'),  
('Anne Hathaway', 'F', '1982-11-12', 'American'),  
('Jessica Chastain', 'F', '1977-03-24', 'American'),  
('Radha Mitchell', 'F', '1973-11-12', 'Australian'),  
('Rachel McAdams', 'F', '1978-11-17', 'Canadian'),  
('Patrick Wilson', 'M', '1973-07-03', 'American'),  
('Jack Nicholson', 'M', '1937-04-22', 'American'),  
('Matthew McConaughey', 'M', '1969-11-04', 'American'),  
('Tye Sheridan', 'M', '1996-11-11', 'American'),  
('Russell Crowe', 'M', '1964-04-07', 'Australian'),  
('Ryan Gosling', 'M', '1980-11-12', 'Canadian'),  
('Benedict Cumberbatch', 'M', '1976-07-19', 'English');
```

INSERT INTO Director

VALUES ('Christopher Nolan', 'M', '1970-07-30', 'English'),  
('Stanley Kubrick', 'M', '1928-07-26', 'American'),  
('Nick Cassavetes', 'M', '1959-05-21', 'American'),  
('Scott Derrickson', 'M', '1966-07-16', 'American'),  
('Steven Spielberg', 'M', '1946-12-18', 'American'),  
('David Lynch', 'M', '1946-01-20', 'American'),  
('Martin Scorsese', 'M', '1942-11-17', 'American'),  
('Tom Hopper', 'M', '1977-02-26', 'Australian'),  
('James Wan', 'M', '1972-10-05', 'Australian'),  
('Christophe Gans', 'M', '1960-03-11', 'French');

INSERT INTO Studio

VALUES ('Working Title Films', 'England'),  
('Syncopy', 'England'),  
('Hawk Films', 'England'),  
('Warner Bros.', 'U.S.'),  
('Blumhouse Productions', 'U.S.'),  
('Legendary Pictures', 'U.S.'),  
('Gran Via', 'U.S.'),  
('Marvel Studios', 'U.S.'),  
('Amblin Partners', 'U.S.'),  
('Konami', 'Japan');

INSERT INTO Score

VALUES ('The Prestige', 8.5),  
('The Conjuring', 7.5),  
('Insidious', 6.9),  
('The Shining', 8.4),  
('Les Misérables', 7.6),  
('Interstellar', 8.6),  
('The Notebook', 7.9),  
('Doctor Strange', 7.5),  
('Ready Player One', 7.5),  
('Silent Hill', 6.6);

INSERT INTO DirectedBy

VALUES ('The Prestige', 'Christopher Nolan'),  
('The Conjuring', 'James Wan'),  
('Insidious', 'James Wan'),  
('The Shining', 'Stanley Kubrick'),  
('Les Misérables', 'Tom Hopper'),  
('Interstellar', 'Christopher Nolan'),  
('The Notebook', 'Nick Cassavetes'),  
('Doctor Strange', 'Scott Derrickson'),  
('Ready Player One', 'Steven Spielberg'),  
('Silent Hill', 'Christophe Gans');

```
INSERT INTO MadeBy
VALUES ('The Prestige', 'Warner Bros.'),
('The Prestige', 'Syncopy'),
('The Conjuring', 'Warner Bros.'),
('Insidious', 'Blumhouse Productions'),
('The Shining', 'Hawk Films'),
('Les Misérables', 'Working Title Films'),
('Interstellar', 'Syncopy'),
('Interstellar', 'Legendary Pictures'),
('The Notebook', 'Gran Via'),
('Doctor Strange', 'Marvel Studios'),
('Ready Player One', 'Warner Bros.'),
('Ready Player One', 'Amblin Partners'),
('Silent Hill', 'Konami');
```

```
INSERT INTO StarIn
VALUES ('The Prestige', 'Hugh Jackman'),
('The Prestige', 'Christian Bale'),
('The Conjuring', 'Vera Farmiga'),
('The Conjuring', 'Patrick Wilson'),
('Insidious', 'Patrick Wilson'),
('The Shining', 'Jack Nicholson'),
('The Shining', 'Shelley Duvall'),
('Les Misérables', 'Hugh Jackman'),
('Les Misérables', 'Russell Crowe'),
('Les Misérables', 'Anne Hathaway'),
('Interstellar', 'Matthew McConaughey'),
('Interstellar', 'Jessica Chastain'),
('Interstellar', 'Anne Hathaway'),
('The Notebook', 'Ryan Gosling'),
('The Notebook', 'Rachel McAdams'),
('Doctor Strange', 'Benedict Cumberbatch'),
('Doctor Strange', 'Rachel McAdams'),
('Ready Player One', 'Tye Sheridan'),
('Silent Hill', 'Radha Mitchell');
```

## Result:

### Movie

	title	length	year	genre
	The Prestige	130	2006	thriller
	The Conjuring	112	2013	horror
	Insidious	102	2010	horror
	The Shining	144	1980	horror
	Les Misérables	158	2012	musical drama
	Interstellar	169	2014	sci-fi
	The Notebook	124	2004	drama
	Doctor Strange	115	2016	sci-fi
	Ready Player One	140	2018	sci-fi
	Silent Hill	125	2006	horror

### Star

	sname	gender	birthday	nationality
	Shelley Duvall	F	1949-07-07	American
	Anne Hathaway	F	1982-11-12	American
	Jessica Chastain	F	1977-03-24	American
	Radha Mitchell	F	1973-11-12	Australian
	Rachel McAdams	F	1978-11-17	Canadian
	Patrick Wilson	M	1973-07-03	American
	Jack Nicholson	M	1937-04-22	American
	Matthew McConaughey	M	1969-11-04	American
	Tye Sheridan	M	1996-11-11	American
	Russell Crowe	M	1964-04-07	Australian
	Ryan Gosling	M	1980-11-12	Canadian
	Benedict Cumberbatch	M	1976-07-19	English

### Director

	dname	gender	birthday	nationality
	Christopher Nolan	M	1970-07-30	English
	Stanley Kubrick	M	1928-07-26	American
	Nick Cassavetes	M	1959-05-21	American
	Scott Derrickson	M	1966-07-16	American
	Steven Spielberg	M	1946-12-18	American
	David Lynch	M	1946-01-20	American
	Martin Scorsese	M	1942-11-17	American
	Tom Hopper	M	1977-02-26	Australian
	James Wan	M	1972-10-05	Australian
	Christophe Gans	M	1960-03-11	French

## Studio

mname	location
Working Title Films	England
Syncopy	England
Hawk Films	England
Warner Bros.	U.S.
Blumhouse Productions	U.S.
Legendary Pictures	U.S.
Gran Via	U.S.
Marvel Studios	U.S.
Amblin Partners	U.S.
Konami	Japan

## StarIn

title	sname
The Prestige	Hugh Jackman
The Prestige	Christian Bale
The Conjuring	Vera Farmiga
The Conjuring	Patrick Wilson
Insidious	Patrick Wilson
The Shining	Jack Nicholson
The Shining	Shelley Duvall
Les Misérables	Hugh Jackman
Les Misérables	Russell Crowe
Les Misérables	Anne Hathaway
Interstellar	Matthew McConaughey
Interstellar	Jessica Chastain
Interstellar	Anne Hathaway
The Notebook	Ryan Gosling
The Notebook	Rachel McAdams
Doctor Strange	Benedict Cumberbatch
Doctor Strange	Rachel McAdams
Ready Player One	Tye Sheridan
Silent Hill	Radha Mitchell

## DirectedBy

title	dname
The Prestige	Christopher Nolan
The Conjuring	James Wan
Insidious	James Wan
The Shining	Stanley Kubrick
Les Misérables	Tom Hopper
Interstellar	Christopher Nolan
The Notebook	Nick Cassavetes
Doctor Strange	Scott Derrickson
Ready Player One	Steven Spielberg
Silent Hill	Christophe Gans

## MadeBy

title	mname
The Prestige	Warner Bros.
The Prestige	Syncopy
The Conjuring	Warner Bros.
Insidious	Blumhouse Productions
The Shining	Hawk Films
Les Misérables	Working Title Films
Interstellar	Syncopy
Interstellar	Legendary Pictures
The Notebook	Gran Via
Doctor Strange	Marvel Studios
Ready Player One	Warner Bros.
Ready Player One	Amblin Partners
Silent Hill	Konami