

SQL (1)

Create Table

```
CREATE TABLE Studios(  
    name VARCHAR(20),  
    website VARCHAR(255)  
);
```

```
CREATE TABLE Stars (  
    name VARCHAR(20),  
    gender CHAR(1),  
    birthyear INT,  
    birthplace VARCHAR(40)  
);
```

```
CREATE TABLE Movies (  
    title VARCHAR(50),  
    year INT,  
    length INT,  
    rating CHAR(2),  
    studioname VARCHAR(20)  
);
```

```
CREATE TABLE StarsIn (  
    title VARCHAR(50),  
    year INT,  
    starname VARCHAR(20)  
);
```

CHAR and VARCHAR

- **CHAR(n)** allocates a fixed space, and if the string that we store is shorter than **n**, then it is padded with blanks.
- Differently, **VARCHAR(n)** denotes a string of up to n characters.
 - VARCHAR(n) allows for compression to save space.
- Use CHAR(n) for frequently used fields, and use VARCHAR(n) otherwise.

Insert – Studios

```
INSERT INTO Studios  
VALUES ('Fox', 'foxmovies.com');
```

```
INSERT INTO Studios  
VALUES ('Disney', 'disney.com');
```

```
INSERT INTO Studios  
VALUES ('Paramount', 'www.paramount.com');
```

Insert – Movies

```
INSERT INTO Movies
```

```
VALUES('Walk the Line', 2005, 136, 'PG', 'Fox');
```

```
INSERT INTO Movies
```

```
VALUES('Pretty Woman', 1990, 119, 'R', 'Disney');
```

```
INSERT INTO Movies
```

```
VALUES('Wayne''s World', 1991, 104, 'PG', 'Paramount');
```

```
INSERT INTO Movies
```

```
VALUES('Unfaithful', 2002, 124, 'R', 'Fox');
```

```
INSERT INTO Movies
```

```
VALUES('Runaway Bride', 1999, 116, 'PG', 'Paramount');
```

```
INSERT INTO Movies
```

```
VALUES('The Princess and the Frog', 2009, 97, 'G', 'Disney');
```

Insert – Stars

```
INSERT INTO Stars  
VALUES('Richard Gere', 'M', 1949, 'Philadelphia, Pennsylvania, USA');
```

```
INSERT INTO Stars  
VALUES('Joaquin Phoenix', 'M', 1974, 'San Juan, Puerto Rico');
```

```
INSERT INTO Stars  
VALUES('Reese Witherspoon', 'F', 1976, 'Baton Rouge, Louisiana, USA');
```

```
INSERT INTO Stars  
VALUES('Julia Roberts', 'F', 1967, 'Smyrna, Georgia, USA');
```

```
INSERT INTO Stars  
VALUES('Mike Myers', 'M', 1963, 'Scarborough, Ontario, Canada');
```

```
INSERT INTO Stars  
VALUES('Oprah Winfrey', 'F', 1954, 'Kosciusko, Mississippi, USA');
```

Insert – StarsIn

```
INSERT INTO StarsIn VALUES('Walk the Line', 2005, 'Joaquin Phoenix');  
INSERT INTO StarsIn VALUES('Walk the Line', 2005, 'Reese Witherspoon');
```

```
INSERT INTO StarsIn VALUES('Pretty Woman', 1990, 'Richard Gere');  
INSERT INTO StarsIn VALUES('Pretty Woman', 1990, 'Julia Roberts');
```

```
INSERT INTO StarsIn VALUES('Wayne''s World', 1991, 'Mike Myers');
```

```
INSERT INTO StarsIn VALUES('Unfaithful', 2002, 'Richard Gere');
```

```
INSERT INTO StarsIn VALUES('Runaway Bride', 1999, 'Richard Gere');  
INSERT INTO StarsIn VALUES('Runaway Bride', 1999, 'Julia Roberts');
```

```
INSERT INTO StarsIn VALUES('The Princess and the Frog', 2009, 'Oprah Winfrey');
```

Create Table with Primary Keys

```
CREATE TABLE Studios(  
    name VARCHAR(20) PRIMARY KEY,  
    website VARCHAR(255)  
);
```

```
CREATE TABLE Stars (  
    name VARCHAR(20) PRIMARY KEY,  
    gender CHAR(1),  
    birthyear INT,  
    birthplace VARCHAR(40)  
);
```

```
CREATE TABLE Movies (  
    title VARCHAR(50),  
    year INT,  
    length INT,  
    rating CHAR(2),  
    studioname VARCHAR(20),  
    PRIMARY KEY (title, year)  
);
```

```
CREATE TABLE StarsIn (  
    title VARCHAR(50),  
    year INT,  
    starname VARCHAR(20),  
    PRIMARY KEY (title, year, starname)  
);
```


Create Table with Foreign Keys

```
CREATE TABLE Studios(  
    name VARCHAR(20) PRIMARY KEY,  
    website VARCHAR(255)  
);
```

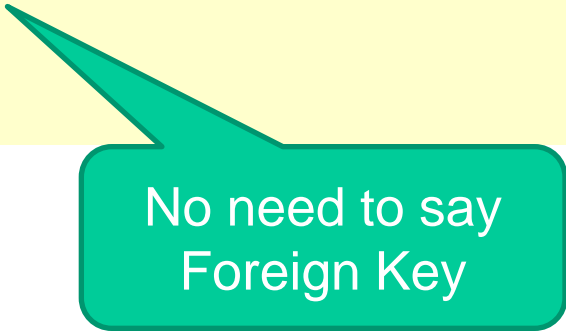
```
CREATE TABLE Stars (  
    name VARCHAR(20) PRIMARY KEY,  
    gender CHAR(1),  
    birthyear INT,  
    birthplace VARCHAR(40)  
);
```

```
CREATE TABLE Movies (  
    title VARCHAR(50),  
    year INT,  
    length INT,  
    rating CHAR(2),  
    studioname VARCHAR(20),  
    PRIMARY KEY (title, year),  
    FOREIGN KEY (studioName) REFERENCES Studios(name) ON DELETE CASCADE  
);
```

```
CREATE TABLE StarsIn (  
    title VARCHAR(50),  
    year INT,  
    starname VARCHAR(20),  
    PRIMARY KEY (title, year, starname),  
    FOREIGN KEY (title, year) REFERENCES Movies(title, year) ON DELETE CASCADE,  
    FOREIGN KEY (starName) REFERENCES Stars(name) ON DELETE CASCADE  
);
```

Short Form for Single Att. Foreign Keys

```
CREATE TABLE Movies (  
    title VARCHAR(50),  
    year INT,  
    length INT,  
    rating CHAR(2),  
    studioname VARCHAR(20) REFERENCES Studios(name) ON DELETE CASCADE,  
    PRIMARY KEY (title, year)  
);
```



No need to say
Foreign Key

Creation and insertion order

1. **Movies** after **Studios**
2. **StarsIn** after **Movies** and **Stars**

Dropping Tables

```
DROP TABLE StarsIn;
```

```
DROP TABLE Movies;
```

```
DROP TABLE Stars;
```

```
DROP TABLE Studios;
```

Note. Order of drops is important if foreign key constraints are in place. Why?

Getting all the tuples of a table

E.g.

```
SELECT *  
FROM Movies;
```

Altering Table Structure

```
ALTER TABLE Stars ADD phone CHAR(7);
```

```
ALTER TABLE Stars MODIFY phone CHAR(10);
```

```
ALTER TABLE Stars DROP COLUMN phone;
```