

# CH1 Relational Data Model

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## 一、定义

### 1. data model数据模型

data model = Structure + Operations + Constrains

结构 + 操作 + 约束

### 2. Relation 关系

Two-dimension table二维表格

### 3. Attribute属性

列的名字

### 4. Schema模式

关系名称和它的属性

```
Movies(title, year, length, genre)
```

### 5. Tuple元组

关系中的一行

```
(Gone, 1939, 231, drama)
```

### 6. Domain域

特定的数据类型，与属性关联

```
Movies(title:string, year:integer, length:integer, genre:string)
```

### 7. Key键

任意两个元组的键不相等

## 二、SQL表

### 1. CREATE TABLE

```

1 CREATE TABLE movieexec(
2     name CHAR(30),
3     address VARCHAR(255),
4     cert INT PRIMARY KEY,    # 主键
5     networth INT
6 );
7 CREATE TABLE studio(
8     name CHAR(50) PRIMARY KEY,
9     address VARCHAR(255),
10    presc INT,
11    FOREIGN KEY (presc) REFERENCES movieexec(cert) # 外键
12 );

```

## 2. INSERT

```

1 INSERT INTO movieexec VALUES('aaa', 'bbb', 114514, 1919810);

```

## 3. QUERY

```

1 SELECT *
2 FROM movies
3 WHERE studioname='Disney' AND year=1990
4 ORDER BY length, title;

```

## 4. DROP

```

1 DROP TABLE R;
2 ALTER TABLE MovieStar ADD phone CHAR(16);
3 ALTER TABLE MovieStar DROP birthdate;

```

## 5. 默认值

```

1 gender CHAR(1) DEFAULT '?';
2 birthdate DATE DEFAULT DATE '0000-00-00'
3 ALTER TABLE MovieStar ADD phone CHAR(16) DEFAULT 'unlisted';

```

## 三、数据类型

1. CHAR(n) VARCHAR(n)
2. BIT(n) BIT VARYING(n)
3. BOOLEAN TRUE, FALSE, UNKNOWN
4. INT or INTERGER or SMALLINT (SHORTINT)
5. FLOAT or REAL DOUBLE PRECISION DECIMAL(n, d) (长度, 小数) (6, 2)->1234.56
6. NUMERIC(n, d) 任意长度的数字, 高精度
7. DATE 1948-05-14
8. TIME 15:00:02.5
9. TIMESTAMP 1984-05-14 12:00:00

