

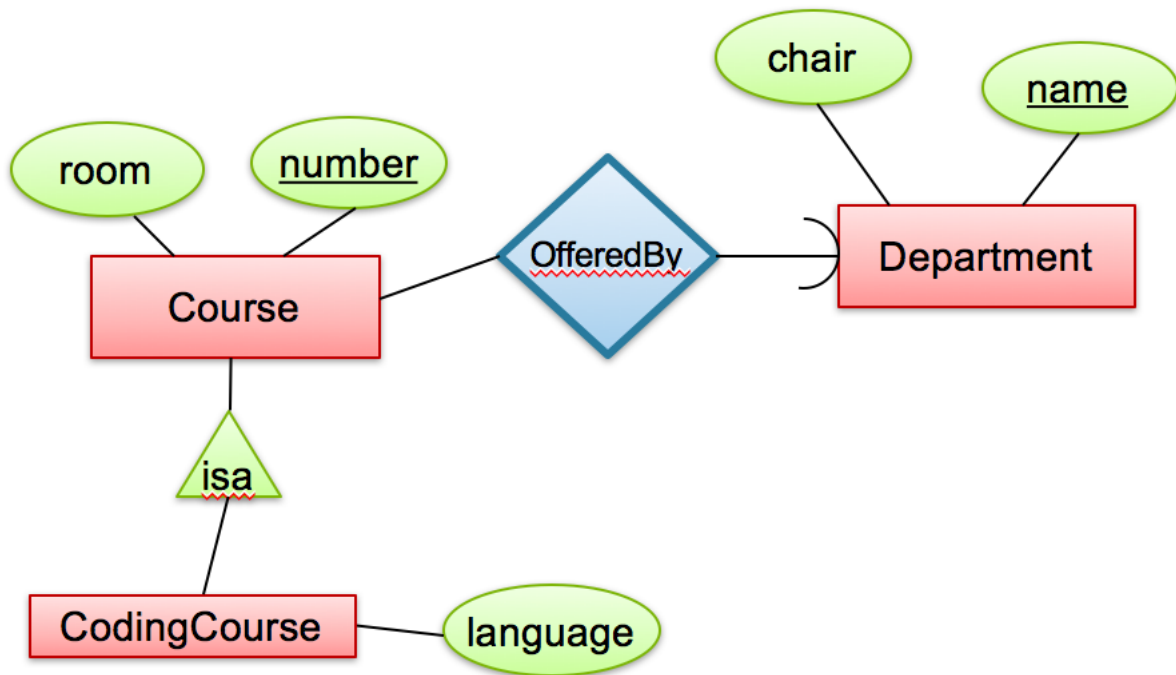
Section 7 Worksheet: E/R Diagrams and Closures

Problem 1: Convert the following SQL CREATE TABLE statements to an E/R diagram

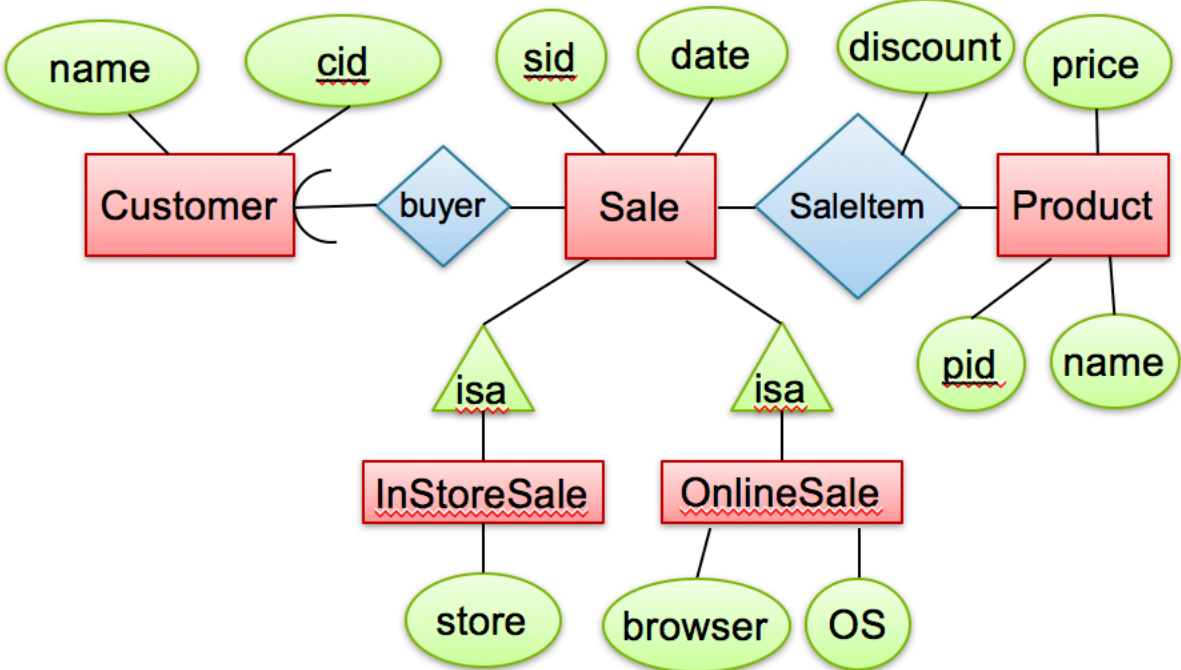
```
CREATE TABLE Studios(  
  name VARCHAR(50),  
  address VARCHAR(100),  
  PRIMARY KEY(name))
```

```
CREATE TABLE Movies(  
  title VARCHAR(50),  
  year INT,  
  genre VARCHAR(50),  
  length INT,  
  ownedBy VARCHAR(50) NOT NULL,  
  PRIMARY KEY(title, year),  
  FOREIGN KEY (ownedBy) REFERENCES Studios(name))
```

Problem 2: Convert the following E/R diagram into a set of tables. Give SQL queries to create those tables and all of the constraints implied by the diagram.



Problem 3: Convert the following E/R diagram into a set of tables. Give SQL queries to create those tables and all of the constraints implied by the diagram.



Problem 4: Given the relation $R(A,B,C,D,E,F,G)$ and the following functional dependencies

$A \rightarrow D$

$D \rightarrow C$

$F \rightarrow EG$

$DC \rightarrow BF$

Find the following closures and indicate which are superkeys:

$\{A\}^+$:

$\{D\}^+$:

$\{F\}^+$:

$\{D,C\}^+$:

$\{C\}^+$:

$\{E,G\}^+$:

$\{B,F\}^+$:

$\{A,B,C\}^+$: