Section 7 Worksheet: E/R Diagrams and Closures

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

```sql
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. Gives 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. Gives 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

\[
\begin{align*}
A & \rightarrow D \\
D & \rightarrow C \\
F & \rightarrow EG \\
DC & \rightarrow BF
\end{align*}
\]

Find the following closures and indicate which are superkeys:

\[
\begin{align*}
\{A\}^+ & : \\
\{D\}^+ & : \\
\{F\}^+ & : \\
\{D,C\}^+ & : \\
\{C\}^+ & : \\
\{E,G\}^+ & : \\
\{B,F\}^+ & : \\
\{A,B,C\}^+ & : 
\end{align*}
\]