

# CS & DA



## Database Management System

### Query Languages

DPP 03 (Discussion Notes)



By- Mili Dhara Ma'am



#Q. Consider the following relational schema

{ actor (insta\_id, name, language, age) Note: unique name of each actor.  
movie (movie\_id, title, year, director\_id) Note: title is unique for each movie.  
acts\_in (insta\_id, movie\_id, character\_name )  
director (director\_id, name, language) Note: unique name of each director.

Write a TRC query to retrieve details of all movies that were released in 2010.  
The output schema should be the same as that of the movie table.

$$\{ t \mid t \in \text{movie} \wedge t.\text{year} = 2010 \}$$

#Q. Consider the following relational schema

actor (insta\_id, name, language, age) Note: unique name of each actor.

movie (movie\_id, title, year, director\_id) Note: title is unique for each movie.

acts\_in (insta\_id, movie\_id, character\_name)

director (director\_id, name, language) Note: unique name of each director.

Write a TRC query to retrieve details of all actors that are not in their thirties (i.e.,  $age < 30$  or  $age > 39$ ). The output schema should be the same as that of the actor table.

{  $t \mid t \in \text{actor} \wedge (t.\text{age} < 30 \vee t.\text{age} > 39)$  }

#Q.

Consider the following relational schema

actor (insta\_id, name, language, age) Note: unique name of each actor.

movie (movie\_id, title, year, director\_id) Note: title is unique for each movie.

acts\_in (insta\_id, movie\_id, character\_name )

director (director\_id, name, language) Note: unique name of each director.

Write a TRC query to retrieve the names of all directors.

$\{t.name \mid t \in \text{director}\}$ .

#Q. Consider the following relational schema

actor (insta\_id, name, language, age) Note: unique name of each actor.

movie (movie\_id, title, year, director\_id) Note: title is unique for each movie.

acts\_in (insta\_id, movie\_id, character\_name )

✓director (director\_id, name, language) Note: unique name of each director.

Write a TRC query to retrieve the names of all “Telugu” language directors.

{ t.name | t ∈ director ∧ t.language = ‘Telugu’ }

#Q. Consider the following relational schema

- ✓ actor (insta\_id, name, language, age) Note: unique name of each actor.
- ✓ movie (movie\_id, title, year, director\_id) Note: title is unique for each movie.
- ✓ acts\_in (insta\_id, movie\_id, character\_name)
- ✓ director (director\_id, name, language) Note: unique name of each director.

Write a TRC query to retrieve the name of each actor together with the titles of the movie he/she has performed in.

$$\{ t \mid \exists a \in \text{actor}, \exists m \in \text{movie}, \exists n \in \text{acts\_in} ( a.\text{insta\_id} = n.\text{insta\_id} \wedge a.\text{movie\_id} = m.\text{movie\_id} \wedge \underline{t.name = a.name} \wedge t.title = m.title ) \}$$

#Q. Consider the following relational schema

✓ actor (insta\_id, name, language, age) Note: unique name of each actor.

movie (movie\_id, title, year, director\_id) Note: title is unique for each movie.

✓ acts\_in (insta\_id, movie\_id, character\_name )

director (director\_id, name, language) Note: unique name of each director.

Write a TRC query to retrieve the names of all actors that have played the character of “Ravan”.

$\{ \underbrace{t.name} \mid t \in \text{actor} \wedge \exists n \in \text{acts\_in} (t.\text{insta\_id} = n.\text{insta\_id} \wedge n.\text{character\_name} = 'Ravan') \}$

#Q. Consider the following relational schema

actor (insta\_id, name, language, age) Note: unique name of each actor.

✓ movie (movie\_id, title, year, director\_id) Note: title is unique for each movie.

✓ acts\_in (insta\_id, movie\_id, character\_name )

director (director\_id, name, language) Note: unique name of each director.

Write a TRC query to retrieve [the names of all actors that have played the character of "Ravan", together with the year the corresponding movies were released].

$\{ t \mid \exists a \in \text{actor} \wedge \exists m \in \text{movie} \wedge \exists n \in \text{acts\_in} (a.\text{insta\_id} = n.\text{insta\_id} \wedge n.\text{movie\_id} = m.\text{movie\_id} \wedge n.\text{character\_name} = 'Ravan' \wedge t.\text{name} = a.\text{name} \wedge t.\text{year} = m.\text{year}) \}$

#Q. Consider the following relational schema

actor (insta\_id, name, language, age) Note: unique name of each actor.

movie (movie\_id, title, year, director\_id) Note: title is unique for each movie.

acts\_in (insta\_id, movie\_id, character\_name)

director (director\_id, name, language) Note: unique name of each director.

Write a TRC query to retrieve all actors that acted in movie with title "Bahubali". The output schema should be the same as that of the actor table.

$$\{ t \mid t \in \text{actor} \wedge \exists m \in \text{movie} \left[ \exists n \in \text{acts\_in} \left( t.\text{insta\_id} = n.\text{insta\_id} \wedge n.\text{movie\_id} = m.\text{movie\_id} \wedge m.\text{title} = 'Bahubali' \right) \right] \}$$

#Q. Consider the following relational schema

- ✓ actor (insta\_id, name, language, age) Note: unique name of each actor.
- ✓ movie (movie\_id, title, year, director\_id) Note: title is unique for each movie.
- ✓ acts\_in (insta\_id, movie\_id, character\_name)
- ✓ director (director\_id, name, language) Note: unique name of each director.

Write a TRC query to retrieve the names of all actors that have performed in a movie directed by “Anurag Kashyap”.

$$\{ t.name \mid t \in \text{actor} \wedge \exists d \in \text{director} \wedge \exists m \in \text{movie} \wedge \exists n \in \text{acts\_in} \\ (t.\text{insta\_id} = n.\text{insta\_id} \wedge n.\text{movie\_id} = m.\text{movie\_id} \wedge \\ m.\text{director\_id} = d.\text{director\_id} \wedge d.\text{name} = 'Anurag Kashyap') \}$$

#Q. Consider the following relational schema

$\left\{ \begin{array}{l} \text{actor} (\underline{\text{insta\_id}}, \text{name}, \text{language}, \text{age}) \text{ Note: unique name of each actor.} \\ \text{movie} (\underline{\text{movie\_id}}, \text{title}, \text{year}, \text{director\_id}) \text{ Note: title is unique for each movie.} \\ \text{acts\_in} (\underline{\text{insta\_id}}, \underline{\text{movie\_id}}, \text{character\_name}) \\ \text{director} (\underline{\text{director\_id}}, \text{name}, \text{language}) \text{ Note: unique name of each director.} \end{array} \right.$

Write a TRC query to retrieve the titles of all movies in which Amitabh and Jaya have co-acted.

$$\begin{aligned}
 & \{ t.\text{title} \mid t \in \text{movie} \wedge \exists a_1 \in \text{actor} \wedge \exists a_2 \in \text{actor} \wedge \exists n_1 \in \text{acts\_in} \\
 & \wedge \exists n_2 \in \text{acts\_in} (a_1.\text{insta\_id} = n_1.\text{insta\_id} \wedge a_1.\text{name} = 'Amitabh' \\
 & \wedge a_2.\text{insta\_id} = n_2.\text{insta\_id} \wedge a_2.\text{name} = 'Jaya' \wedge \\
 & t.\text{movie\_id} = n_1.\text{movie\_id} \wedge t.\text{movie\_id} = n_2.\text{movie\_id} ) \}
 \end{aligned}$$



THANK - YOU