

CS & DA

Database Management System

DPP: 3

Query Languages

Q1 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.

Q2 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.

Q3 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.

Q4 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.

Q5 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.

Q6 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".

Q7 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.

Q8 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.

Q9 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”.

Q10 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 titles of all movies in which Amitabh and Jaya have co-acted.

Answer Key

Q1 $\{t \mid t \in \text{movie} \wedge t.\text{year} = 2010\}$

Q2 $\{t \mid t \in \text{actor} \wedge (t.\text{age} < 30 \vee t.\text{age} > 39)\}$

Q3 $\{t.\text{name} \mid t \in \text{director}\}$

Q4 $\{t.\text{name} \mid t \in \text{director} \wedge t.\text{language} = \text{'Telugu'}\}$

Q5 $\{t \mid \exists a \in \text{actor}, \exists m \in \text{movie}, \exists x \in \text{acts_in} ($
 $a.\text{insta_id} = x.\text{insta_id} \wedge m.\text{movie_id} =$
 $x.\text{movie_id} \wedge t.\text{name} = a.\text{name} \wedge t.\text{title} = m.\text{title}$
 $) \}$

Q6 $\{t.\text{name} \mid t \in \text{actor} \wedge \exists x \in \text{acts_in} (t.\text{insta_id} =$
 $x.\text{insta_id} \wedge x.\text{character_name} = \text{'Ravan'}) \}$

Q7 $\{t \mid \exists a \in \text{actor} \wedge \exists m \in \text{movie} \wedge \exists x \in \text{acts_in}$
 $(a.\text{insta_id} = x.\text{insta_id} \wedge m.\text{movie_id} =$
 $x.\text{movie_id} \wedge x.\text{character_name} = \text{'Ravan'} \wedge$
 $t.\text{name} = a.\text{name} \wedge t.\text{year} = m.\text{year}) \}$

Q8 $\{t \mid t \in \text{actor} \wedge \exists m \in \text{movie} [\exists x \in \text{acts_in} ($
 $t.\text{insta_id} = x.\text{insta_id} \wedge x.\text{movie_id} =$
 $m.\text{movie_id} \wedge m.\text{title} = \text{'Bahubali'}) \}] \}$

Q9 $\{t.\text{name} \mid t \in \text{actor} \wedge \exists d \in \text{director} \wedge \exists m \in$
 $\text{movie} \wedge \exists x \in \text{acts_in} (t.\text{insta_id} = x.\text{insta_id} \wedge$
 $x.\text{movie_id} = m.\text{movie_id} \wedge m.\text{director_id} =$
 $d.\text{director_id} \wedge d.\text{name} = \text{'Anurag Kashyap'}) \}$

Q10 $\{t.\text{title} \mid t \in \text{movie} \wedge \exists a1 \in \text{actor} \wedge \exists a2 \in$
 $\text{actor} \wedge \exists x1 \in \text{acts_in} \wedge \exists x2 \in \text{acts_in} ($
 $t.\text{movie_id} = x1.\text{movie_id} \wedge t.\text{movie_id} =$
 $x2.\text{movie_id} \wedge$
 $a1.\text{insta_id} = x1.\text{insta_id} \wedge a1.\text{name} = \text{'Amitabh'}$
 \wedge
 $a2.\text{insta_id} = x2.\text{insta_id} \wedge a2.\text{name} = \text{'Jaya'}) \}$

Hints & Solutions



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