

نوشتن تغییرات table ها

(1)

(الف)

J1 ← $\rho_{\mu}(\text{Movie})$ \bowtie $A.\text{mid} = AC.\text{mid}$ $\rho_{AC}(\text{Acting})$ \bowtie $AC.\text{arid} = Ar.\text{arid}$ $\rho_{Ar}(\text{Artist})$

J2 ← J1 \bowtie $J1.\text{did} = D.\text{did}$ $\rho_D(\text{Director})$

T1 ← $\sigma_{(D.\text{first-name} = Ar.\text{first-name} \wedge D.\text{last-name} = Ar.\text{lname})}$ (J2)

RESULT ← $\rho(\text{movie_language, num_movie})$ (Language $\overset{3}{\text{COUNT}}(\text{mid})$ (T1))

T1 ← $\sigma_{\text{is_adult} = 1}$ (Movie)

(ب)

T2 ← $\sigma_{\text{start_year} \geq 2017 \wedge \text{end_year} \leq 2019}$ (T1)

J1 ← T2 \bowtie $T2.\text{mid} = R.\text{mid}$ $\rho_R(\text{Rating})$

RESULT ← $\overset{3}{\text{MAX}}(\text{avg_ratings}), \mu.\text{title}$ (J1)

J1 ← $\rho_{\mu}(\text{Movie})$ \bowtie $\mu.\text{mid} = AC.\text{mid}$ $\rho_{AC}(\text{Acting})$

(ج)

J2 ← J1 \bowtie $J1.\text{arid} = Ar.\text{arid}$ $\rho_{Ar}(\text{Artist})$

T1 ← $\rho(\text{arid, mid, num_of_roles})$ (arid, mid $\overset{3}{\text{COUNT}}(\text{character_name})$ (J2))

T2 ← $\sigma_{\text{num_of_roles} \geq 2}$ (T1)

RESULT ← arid, mid $\overset{3}{\text{SUM}}(\text{age})$

if date of death is given:
age = birth_year - death_year

else
age = CURDATE() - birth_year

T1 \leftarrow σ genre = "surreal" \wedge genre = "horror" (Movie) (1)

T2 \leftarrow T1 \bowtie $M.mid = R.mid$ P_R (Rating)

RESULT \leftarrow $P_{(arg)}$ (3 AVG (arg-rating) (T2))

T1 \leftarrow σ age ≥ 15 \wedge age ≤ 20 P_{Ar} (Artist) (2)

J1 \leftarrow T1 \bowtie $T1.arid = AC.arid$ P_{AC} (Acting)

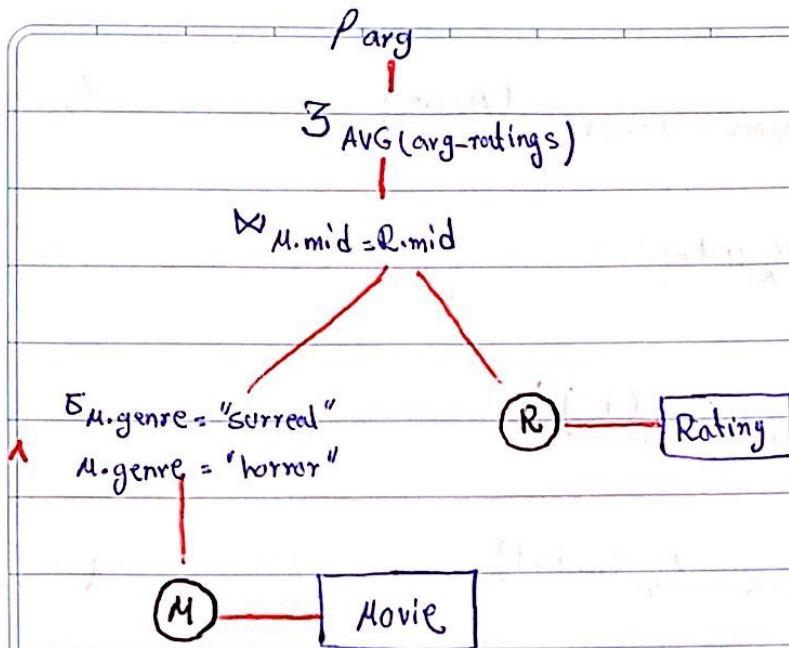
J2 \leftarrow J1 \bowtie $J1.mid = M.mid$ P_M (Movie)

T3 \leftarrow σ Ar.nationality = M.region (J2)

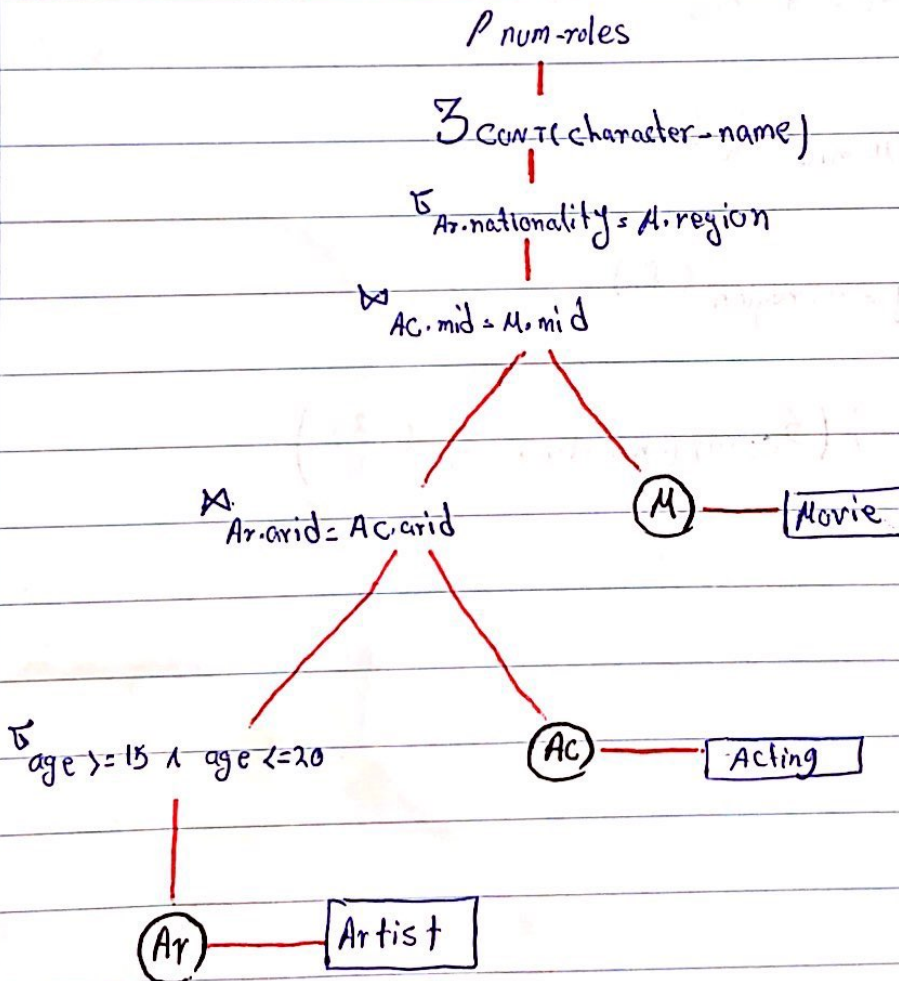
RESULT \leftarrow $P_{(num-roles)}$ (3 COUNT (character-name) (T3))

2

الف) حرف کوثری (6)



ب) حرف کوثری (8)



(3)

(الف)

$T1 \leftarrow \sigma_{Ar.gender = "male"} P_{Ar} (Artist)$

$T2 \leftarrow T1 \bowtie_{T1.arid = Ac.arid} P_{Ac} (Acting)$

$T3 \leftarrow T2 \bowtie_{T2.mid = M.mid} P_M (Movie)$

$T4 \leftarrow P_{(num-of-male-Artist)} (T3.mid \text{ COUNT}(T3.arid) (T3))$

$T5 \leftarrow \sigma_{num-of-male-Artist > 5} (T4)$

$T6 \leftarrow T5 \bowtie_{T5.mid = M.mid} P_M (Movie)$

$RESULT \leftarrow \pi_{T6.title \wedge T6.num-of-male-Artist} (T6)$

$T1 \leftarrow \sigma_{M.genre = "Drama"} P_M (Movie)$

(ب)

$T2 \leftarrow \sigma_{D.Last-name = "Kubrick"} P_D (Director)$

$T3 \leftarrow T1 \bowtie_{T1.did = T2.did} (T2)$

$T_1' \leftarrow \sigma_{M.genre = "Mystery"} P_M (Movie)$

$T_2' \leftarrow \sigma_{D.Last-name = "Hitchcock"} P_D (Director)$

$T_3' \leftarrow T_1' \bowtie_{T_1'.did = T_2'.did} (T_2')$

$T'' \leftarrow T_3 \cup T_3'$

$RESULT \leftarrow \pi_{T''.title} (T'')$

J1 ← P_{Ar} (Artist) ✕ Ar. arid = Ac. arid P_{Ac} (Acting) (2)

J2 ← J1 ✕ J1.mid = M.mid P_M (Movie)

J3 ← J2 ✕ J2.did = D.did P_D (Director)

T1 ← ⚡ Ar.last_name = D.last_name (J3)

RESULT ← ⚡ Ar.first_name ∩ Ar.last_name (T1)