DB תרגיל 2: אלגברה רלציונית ו- SQL

מגישים: אביגל שרון וגדי קאוחה

סימונים:

$A := authors$

$C := conferences$

$I := institutions$

$huji :=$ Hebrew University of Jerusalem

$$\rho_{RES(name)}\left(\Pi_{name}\left(\sigma_{institution=huji}(A)\right)\right)$$ (1.)

$$\rho_{RES(name,institution)}\left(\Pi_{name,institution}\left(\sigma_{country=israel}(A \bowtie I)\right)\right)$$ (2.)

סימון:

$Cond := (area = ai \lor subarea = db) \land country = israel \land adjusted\ count \geq 2$ (3.)

$$\rho_{RES(name,institution)}\left(\Pi_{name,institution}\left(\sigma_{cond}(A \bowtie C \bowtie I)\right)\right)$$

סימונים: (4.)

$C_v : institution = huji \land subarea = vision$

$C_{ai} : institution = huji \land subarea = ai$

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$$\rho_{V(name)}\left(\Pi_{name}\left(\sigma_{C_V}(A \bowtie C)\right)\right)$$ .10

$$\rho_{AI(name)}\left(\Pi_{name}\left(\sigma_{C_{AI}}(A \bowtie C)\right)\right)$$

$$\rho_{RES(name)}\left(V \cap AI\right)$$

$$\rho_{V(year,name)}\left(\Pi_{year,name}\left(\sigma_{C_V}(A \bowtie C)\right)\right)$$.?

$$\rho_{AI(year,name)}\left(\Pi_{year,name}\left(\sigma_{C_{AI}}(A \bowtie C)\right)\right)$$

$$\rho_{RES(y,n)}\left(V \cap AI\right)$$

C_{NV} := area ≠ systems ∨ year ≥ 1990 : הסבר .5

$$\rho_{ALL(name)}\left(\Pi_{name}(A)\right)$$

$$\rho_{NV(name)}\left(\Pi_{name}\left(\sigma_{C_{NV}}(A \bowtie C)\right)\right)$$

$$\rho_{RES(name)}\left(ALL - NV\right)$$

C_{AI} := name = Noam Nisan ∧ area = AI : הסבר .6

3) $\rho_{\text{Denominator(conference)}}\left(\Pi_{\text{conference}}\left(\sigma_{\text{con}}\left(A \bowtie C\right)\right)\right)$

$\rho_{\text{Numerator(name, conference)}}\left(\Pi_{\text{name, conference}}\left(A\right)\right)$

$\rho_{\text{RES(name)}}\left(\text{Numerator} \div \text{Denominator}\right)$

cond: institution = huji $\wedge$ (7)

conference = focs $\wedge$

year $\geq$ 2000 $\wedge$

year $\leq$ 2020 .

$\left(\rho_{\text{possible}}\right)$ $\rho_{\text{possible(name, count, year)}}\left(\Pi_{\text{name, count, year}}\left(\sigma_{\text{cond}}\left(A\right)\right)\right)$

$\rho_{\text{NW(year, name)}}\left(\Pi_{\text{year, name}}\left(\sigma_{(n_1 \neq n_2) \wedge (c_1 < c_2) \wedge (y_1 = y_2)}\left(\rho_{R(n_1, c_1, y_1, n_2, c_2, y_2)}\left(P \times P\right)\right)\right)\right)$

$\rho_{\text{RES(y,n)}}\left(\left(\Pi_{\text{year, name}}\left(P\right)\right) - NW\right)$