

جبر رابطه ای کسری نویسی
مربوط به پرونده رسم درس پایگاه داده
استاد محترم

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$$\pi_{\text{teamName}, \text{dore}} \left[\pi_{\text{teamID}, \text{dore}} \left(\rho_{\text{leagueID}, '1'} (\text{league-team}) \right) \right] \bowtie (\text{team}) \quad \text{سوال 1:}$$

$$\cup \pi_{\text{teamName}, \text{dore}} \left[\pi_{\text{teamID}, \text{dore}} \left(\rho_{\text{leagueID}, '5'} (\text{league-team}) \right) \right] \bowtie (\text{team})$$

$$A = \left[\left(\pi_{\text{teamID}, \text{leagueID}, \text{dore}} (\text{league-team}) \right) \bowtie \left(\pi_{\text{bazikonID}, \text{teamID}} (\text{bazikon-team}) \right) \bowtie \left(\pi_{\text{CodeMelli}, \text{bazikonName}} (\text{bazikon}) \right) \right] \bowtie \left(\pi_{\text{bazikonID}, \text{gameID}, \text{goalID}} (\text{golZadan}) \right) \quad \text{سوال 2:}$$

$$B = \left[\pi_{\text{bazikonName}, \text{dore}, \text{count}, \text{leagueID}} \left(\rho_{\text{MAX}(\text{COUNT}(\text{bazikonID})) \text{ as count}} (A) \right) \right] \bowtie (\text{league})$$

$$\pi (B) \\ \text{bazikonName} \\ \text{dore} \\ \text{count} \\ \text{leagueName}$$

$$A = \left[\left(\pi_{\substack{\text{team ID} \\ \text{league ID} \\ \text{dore}}} (\text{team-league}) \right) \bowtie \left(\pi_{\substack{\text{team ID} \\ \text{bazikon ID}}} (\text{bazikon-team}) \right) \bowtie \left(\pi_{\substack{\text{game ID} \\ \text{khata konande} \\ \text{khata ID}}} (\text{khata kardan}) \right) \right] \quad : \text{FOL}$$

$$\pi_{\substack{\text{league Name} \\ \text{team ID} \\ \text{dore}}} \left[\text{league} \bowtie \left(g_{\substack{\text{team ID} \\ \text{dore} \\ \text{league ID}}}^{(A)} \left(\max(\text{count}(\text{khata ID})) \right) \right) \right]$$

$$A = \left[\left(\pi_{\substack{\text{team ID} \\ \text{league ID} \\ \text{dore}}} (\text{team-league}) \right) \bowtie \left(\pi_{\substack{\text{team ID} \\ \text{bazikon ID}}} (\text{bazikon-team}) \right) \bowtie \left(\pi_{\substack{\text{game ID} \\ \text{khata konande} \\ \text{khata ID}}} (\text{khata kardan}) \right) \right] \quad : \text{FOL}$$

$$\pi_{\substack{\text{bazikon Name} \\ \text{league Name} \\ \text{dore}}} \left[\pi_{\substack{\text{league Name} \\ \text{bazikon ID} \\ \text{dore}}} \left[\text{league} \bowtie \left(g_{\substack{\text{bazikon ID} \\ \text{dore} \\ \text{league ID}}}^{(A)} \left(\max(\text{count}(\text{khata ID})) \right) \right) \right] \right] \bowtie (\text{bazikon})$$

$$A = \left[\left(\pi_{\substack{\text{team ID} \\ \text{league ID}}} (\text{team-league}) \right) \bowtie \left(\pi_{\substack{\text{team ID} \\ \text{bazikon ID}}} (\text{bazikon-team}) \right) \bowtie \left(\pi_{\substack{\text{game ID} \\ \text{khata shavande} \\ \text{khata ID}}} (\text{khata kardan}) \right) \right] \quad : \text{FOL}$$

$$B = \text{bazikon} \bowtie \left(\text{league} \bowtie \left(g_{\substack{\text{league ID} \\ \text{bazikon ID}}}^{(A)} \left(\max(\text{count}(\text{khata ID})) \right) \right) \right)$$

$$C = \text{bazikon} \bowtie \left(\text{league} \bowtie \left(g_{\substack{\text{league ID} \\ \text{bazikon ID}}}^{(A)} \left(\min(\text{count}(\text{khata ID})) \right) \right) \right)$$

BUC

: ۶ سوال

$$A = \left[\pi_{\substack{\text{(team-league)} \\ \text{teamID} \\ \text{leagueID}}} \bowtie \pi_{\substack{\text{(game)} \\ \text{gameID}, \text{tamashagar} \\ \text{teamMizbanID}}} \right]$$

$$B = \text{league} \bowtie \left(\begin{array}{c} g(A) \\ \text{MAX(tamashagar)} \\ \text{dore, leagueID} \\ \text{gameID} \end{array} \right)$$

$$C = \text{league} \bowtie \left(\begin{array}{c} g(A) \\ \text{min(tamashagar)} \\ \text{dore, leagueID} \\ \text{gameID} \end{array} \right)$$

BUC

$$\pi_{\substack{\text{(bazikon)} \\ \text{bazikonID} \\ \text{bazikonName}}} \bowtie \left[\pi_{\substack{\text{(game-bazikon)} \\ \text{bazikonID} \\ \text{gameID}}} \right] = \underline{V} \text{ سوال}$$

rooydadID = '4' or
rooydadID = '5'

سوال ۹ league-team

: ۹ سوال

$$A = \left[\pi_{\substack{\text{(league-team)} \\ \text{teamID} \\ \text{leagueID} \\ \text{dore}}} \bowtie \pi_{\substack{\text{(game)} \\ \text{gameID} \\ \text{teamMizban} \\ \text{teamMehman}}} \bowtie \pi_{\substack{\text{(gol)} \\ \text{gameID} \\ \text{golID} \\ \text{bazikonID}, \text{modeleGol}}} \right] = \underline{II} \text{ سوال}$$

$$\text{team} \bowtie \text{league} \bowtie \left(\begin{array}{c} g(A) \\ \text{Count(golID) as count} \\ \text{dore, leagueID} \\ \text{teamID, modeleGol} \end{array} \right)$$

$$A = \left[\pi_{\substack{\text{(game)} \\ \text{gameID} \\ \text{teamMizban, teamMehman} \\ \text{lebas teamMizban} \\ \text{lebas teamMehman}}} \right] \bowtie \pi_{\substack{\text{(league-team)} \\ \text{leagueID} \\ \text{teamID}}}$$

: ۱۲ سوال

$$\text{league} \bowtie \left(\begin{array}{c} g(A) \\ \text{Count(gameID)} \\ \text{dore, leagueID, teamID, lebasID} \end{array} \right)$$

$$A = \left[\pi_{\text{teamID}, \text{roydadID}} \left(\delta_{\text{roydadID} = 'F'} (\text{game-baziken}) \right) \cap (\text{baziken-team}) \right] \quad : 15 \text{ دل}$$

$$\text{team} \cap \left(\begin{array}{c} g(A) \\ \text{MAX}(\text{Count}(\text{roydadID})) \\ \text{teamID} \end{array} \right)$$

$$A = \left[\text{league} \cap (\text{league-team}) \cap (\text{game}) \cap \left(\delta_{\text{naghsh} = 'davar \text{ vasat}'} (\text{davar}) \right) \right] \quad : 18 \text{ دل}$$

$$\left(\begin{array}{c} g(A) \\ \text{dore, MAX}(\text{Count}(\text{gameID})) \\ \text{leagueID, davarID} \end{array} \right) \cap \text{davar} \cap \text{league}$$