Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

Subject: Database System (CSE 3103)

Semester: FALL 2020

Quiz: 02

Marks: 20

Instructions:

i. *You need to submit this QUIZ as handwritten document. You need to write in formal A4 paper one sided for the answers. Maintain 1.0'' inch margin in the left and 1.5"inch margin on the top of the page.*

ii. ***IMPORTANT:*** *A Top Sheet Need to Make with Mentioning* ***Name, ID, Couse No, Course Name, Semester -FALL 2020, Date and Signature****. In every page need to have the page number in below.* ***ID and Signature*** *need to enclose in the top margin in each of the paper. If you forgot to write in some page that page will not be evaluated.*

iii. *After completion of the task, you need to scan the whole document. Use CamScanner App from mobile, or if you have scanner at home you can use that too and Upload in PDF format. For capturing picture try to capture with decent light, do not use flash light for capture image/scan. You need to rename your script in ID_Q2_FL2020 (****Example : 180104001_Q2_FL2020****) before uploading the PDF.*

1. There are 2 tables named CSE_Club and Idea_Club in below. **7**

CSE_Club

id	name	Section	Sex
Your ID	Your Name	Your Section	M/F
Your CR ID	CR Name	CR Section	M/F
Your SR ID	SR Name	SR Section	M/F

Idea_Club

id	name	Section	Sex
Your ID	Your Name	Your Section	M/F
Your CR ID	CR Name	CR Section	M/F
Your Friend ID	Friend Name	Friend Section	M/F

In those above tables put some exact data according to 3rd year 1st semester class information of Fall 2020 semester. Perform three (03) operations on those tables and only show the result table in answer.

a) CSE_Club ∪ Idea_Club
b) CSE_Club ∩ Idea_Club
c) CSE_Club — Idea_Club

2. Considering the sample instances as given in Appendix based on "Football" database, **find** the output relation of the following outer join operation. **3**

eteam ⋈ goal

3. **Construct Relational algebra expressions** for the following queries based on the 'Football' database schema as given in Appendix. **10**

[Questions **a, b, d, e, g for ODD ID and a, c, d, f, h for EVEN ID]**

a) Find the name of the stadiums in which matches of 12-Jun-2021 took place.
b) Find the id of the teams (team1 and team2) those played on 12-Jun-2021. Your result relation must contain a single column.
c) Find the player who scored the fastest goal considering all matches.
d) Find the number of goals scored by each team. You must show the team name (not teamid) and the number of goals scored.
e) Find the players who scored goals.
f) Find the number of matches played at each stadium.
g) Find the name of the coaches whose team played on 12-Jun-2021.
h) Find the player name, match date and the stadium for those players who scored goals in the first half of a match (within first 45 minutes).

Appendix: Football Database

There are 3 relations in football database schema. The relations are given below.

1. **Game** (id, mdate, stadium, team1, team2)
2. **Eteam** (id, teamname, coach)
3. **Goal** (matchid, teamid, player, gtime)

Game relation holds match/game related data. Each game has an identifier (id), match date (mdate), stadium where the match held (stadium), and the participating teams identifier (team1 and team2).

Eteam relation contains data about a team. Each team has an identifier (id), a team name (teamname) and a coach name (coach).

Goal relation holds data about all goals scored in a game/match. Each goal is scored in a match (matchid), by a particular team (teamid) and a player of that team (player) at a specific minute of that game (gtime).

A sample instances of the relations is shown below.

game

id	mdate	stadium	team1	team2
1001	8 June 2012	National Stadium, Warsaw	POL	GRE
1002	8 June 2012	Stadion Miejski (Wroclaw)	RUS	CZE
1003	12 June 2012	Stadion Miejski (Wroclaw)	GRE	CZE
1004	12 June 2012	National Stadium, Warsaw	POL	RUS
...				

eteam

id	teamname	coach
POL	Poland	Franciszek Smuda
RUS	Russia	Dick Advocaat
CZE	Czech Republic	Michal Bilek
GRE	Greece	Fernando Santos
...		

goal

matchid	teamid	player	gtime
1001	POL	Robert Lewandowski	17
1001	GRE	Dimitris Salpingidis	51
1002	RUS	Alan Dzagoev	15
1002	RUS	Roman Pavlyuchenko	82
...			