Computer Science Department

University of Computer & Emerging Sciences (FAST-NU)

ASSIGNMENT COVER SHEET

COURSE TITLE DATABASE SYSTEMS COURSE CODE CS2005

INSTRUCTOR Teaching Team. TYPE [ ] Indiv. [\] Group (Please tick)

ASSIGNMENT NO 2

ASSIGNMENT Creating and manipulating a Database in SQL

HAND OUT DATE 23-March-2024 DUE DATE 02-April-2024

ASSESSMENT CRITERIA (or attached)	% Mark
Submission: Hard and **Scanned** copies are required. Submit **Hard Copies** to Mr. Amir or Mr. Fahad in the Academic Office (till the due date and time). The submissions that will be slided beneath Instructor's office doors or submitted elsewhere will not be graded. Also, Submit **Scanned Copies** of the assignment on Google Classroom. **Group of max 2 students is allowed, individual work is acceptable in extreme situations and with prior written (by email) permission of theory course teacher. Such permission should be sought at least 5 days before the deadline of the assignment.** **Any type of plagiarism will lead to 0% marks of both/all parties.** **Late submission (even 1 min) will result in zero marks.** **There will be no credit if the given requirements are changed.**	

TO BE COMPLETED BY STUDENT (TEAM LEAD)

NAME _____

ID NO _____

Time Taken

DECLARATION: I/We declare that this Coursework is my/our group's own work

SIGNATURES (All members)

GROUP MEMBERS ID

ID _____

ID _____

GRADE/ MARK AWARDED [ ] COMMENTS _____

INSTRUCTOR'S SIGNATURE _____ DATE _____

Question: PSL Case Study

In the Pakistan Super League (PSL) Season 9, six teams compete: Karachi Kings, Lahore Qalandars, Islamabad United, Peshawar Zalmi, Quetta Gladiators, and Multan Sultans. These matches take place across four iconic stadiums: National Stadium in Karachi, Gaddafi Stadium in Lahore, Rawalpindi Cricket Stadium, and Multan Cricket Stadium. Throughout the season, each team plays a series of matches in a round-robin format, leading to playoffs that include a Qualifier, two Eliminators, and the Final. The points system awards 2 points for a win, 1 for a no result/tie, and none for a loss, determining the top 4 teams that advance to the playoffs. Within this setup, each team has a diverse squad of 18 players, creating a dynamic tournament structure.

Consider that you are appointed the responsibility for creating a database to handle the PSL record. From the requirements for this database, the following information was collected:

1. **TEAM**
    - Name
    - Home Stadium
    - Number of wins
    - Number of Losses
2. **PLAYER**
    - Player ID
    - Name
    - Role
    - Team Name
3. **STADIUM**
    - Stadium ID
    - Name
    - Location
    - Capacity
4. **MATCH**
    - Match ID
    - Date
    - Time
    - Stadium ID
    - Match Type (Qualifier, Eliminator, Final)
    - Team1_ID
    - Team2_ID
5. **PERFORMANCE**
    - Performance ID
    - Match ID
    - Player ID
    - Runs Scored
    - Wickets Taken
    - Catches
6. **WINNER**
    - Match ID
    - Winning Team Name

Questions

Attached with this pdf are 2 csv files, each having a table for players and teams data respectively. You must load these tables into your SQL* Loader Utility database and then use it to solve the queries mentioned below.

1) Create all required tables (other than the 2 already shared) in SQL and then insert at least 20 dummy data into each table. **Marks 40**

2) Determine the player with the highest number of catches in the tournament. **Marks 10**

3) List all Teams with their Home Stadiums. (e.g. National Park Stadium in Krachi). **Marks 5**

4) Show the total capacity of a specific stadium. **Marks 5**

5) Calculate the average runs scored by players in each team. **Marks 10**

6) Count the number of matches played in a specific stadium (e.g., Gaddafi Stadium in Lahore). **Marks 5**

7) List players along with the total runs scored by each player in the tournament. **Marks 10**

8) Find teams with more than a certain number of wins (e.g., more than 3 wins). **Marks 10**

9) Find all players who are bowlers in any team. **Marks 5**

10) List players who scored more than 50 runs and took at least 3 wickets in a single match. **Marks 10**

11) Find the team with the highest number of total runs scored throughout the tournament. **Marks 20**

12) Show matches along with the winning team name. **Marks 10**

13) List all match types (Qualifier, Eliminator, Final) without duplicates. **Marks 5**

14) List stadiums and the number of matches hosted by each. **Marks 10**

15) Find all players in a specific team (e.g., Lahore Qalandars). **Marks 5**

16) List the top 3 players with the most runs scored in final matches. **Marks 10**

17) Identify players who have scored more than 50 runs in winning matches. **Marks 20**

18) Determine the top 3 players with the highest aggregate runs scored in Qualifier, Eliminator, and Final matches. **Marks 20**

19) For each team, calculate the average runs scored and wickets taken per match in each stadium where they have played. **Marks 15**

20) Find the number of wins each team has achieved in their home stadium. **Marks 15**

21) Calculate Current Number of Wins for Each Team. **Marks 10**

22) Identify players whose performance (runs scored, wickets taken, or catches) was pivotal in securing wins for their team. **Marks 15**

23) Write 5 more SQL queries other than this that must each contain the following concepts and write their importance in the comments why do you think they are important and where can they be used.

- **Correlated nested queries.**
- **Union**
- **Group by**
- **Substring comparison using LIKE**
- **Having clause**

Marks 20

Deliverables:

- **Complete MySQL query file**
- **Documentation:**
    1. Paragraphs explaining any assumptions you made for the case study.
    2. Your choice of primary key and foreign key (if any) for each table
    3. One line explaining which key concept that has been taught in class have you used for each query.

Note: Learn SQL Loader yourself. It is very easy to learn and use.*