University of Central Punjab

FACULTY OF INFORMATION TECHNOLOGY

Introduction to Computing-LAB

Term Project: Fall-2024

Project Title:

"Pakistan Super League (PSL) Management System"

Project Overview:

This term project aims to solidify your understanding of fundamental programming concepts using C++. Your task will be to design and implement a comprehensive **Pakistan Super League (PSL) Management System.** By working on this project, you will practice and reinforce your skills in arrays, loops, character arrays, and conditional statements, ensuring a hands-on grasp of their core principles and practical applications. Through this project, you will bridge theoretical knowledge with practical experience, developing essential programming skills and a deeper understanding of problem-solving. Collaboration, critical thinking, and creativity are key aspects of this endeavor to help you build a strong foundation in programming and logical thinking.

The PSL Management System should enable users to manage and simulate the PSL experience. It will include features such as team management, player drafting, match scheduling, and maintaining statistics. The system must provide a user-friendly menu-driven interface for the user to interact with the program.

Objectives and goals:

Our primary goal is to enable you to effectively apply basic programming concepts to create a functional and interactive system. By the end of this project, you will learn;

- How to design and implement a menu-driven system using arrays, loops, and conditional statements.
- Managing and organizing data using simple arrays and character arrays.
- Enhancing problem-solving and debugging skills through hands-on practice.

Features to Implement:

1. Team Management:

- Store and display details of six PSL teams:
    - **Team Details**: Name, home city, and home ground.
    - **Grounds**: Assign specific grounds for each team (e.g., National Stadium for Karachi Kings, Gaddafi Stadium for Lahore Qalandars).

2. Player Drafting System:

- Create a player pool of at least 30 players (predefined).
- Each player should have attributes such as name, age, role (e.g., batsman, bowler, all-rounder, wicketkeeper), and base price.
- Simulate a player drafting process where:
    - ❖ Teams take turns selecting players from the pool.
    - ❖ Ensure no player is drafted more than once.
- Allow each team to select up to 15 players.

3. Match Scheduling:

- Implement a league format where each team plays against every other team once.
- Assign matches to different grounds based on the teams' home grounds.
- Generate and display a complete match schedule in a readable format.

4. Match Simulation and Results:

- Input match details such as:
    - Scores for each team.
    - Top-performing players.
- Determine the winner based on scores.
- Update the points table (2 points for a win, 0 for a loss).

5. Points Table:

- Maintain a live points table that displays:
    - ❖ Team name, matches played, matches won, matches lost, and total points.
- Sort teams based on total points and matches won.

6. Search and Filter Options:

- Search for a specific team or player by name and display details.
- Filter players by:
    - ❖ Role (e.g., batsmen, bowlers).
    - ❖ Team (e.g., show all players belonging to Lahore Qalandars).

7. Exit:

- Provide an option to exit the program gracefully.

Additional Details:

Constraints:

- Use **simple arrays** to store data for teams, players, and matches.
- Use **character arrays** for strings such as names, roles, and grounds.
- Implement all logic using **loops** and **if-else statements** only.
- **No built-in or user-defined functions** are allowed.

Expected Output:

The program should provide the following outputs:

- Team details with home grounds.
- Drafted players for each team.
- Match schedule, including teams and grounds.
- Match results and updated points table.
- Search results for teams and players.

Deliverables:

- Complete C++ source code for the PSL Management System.
- A report explaining the program's structure and functionality.

Evaluation Criteria:

- Completeness and correctness of the implemented features.
- Efficient and readable use of arrays, loops, and conditional statements.
- Creativity in presenting outputs (e.g., tables, neat formatting).
- 20% Marks for submission and 70% Marks for the Viva/Presentation.

Evaluation Criteria	
Project Submission	**Viva / Presentation**
20%	80%

Sample Menu:

```
Welcome to the PSL Management System
1. View Teams and Home Grounds
2. Draft Players for Teams
3. View Match Schedule
4. Enter Match Results
5. Display Points Table
6. Search for Teams or Players
7. Exit
Enter your choice:
```

Best of Luck!