

Simple Database Management System

A. Project Description

Design and implement a **Database Management System** in C to manage information about football teams and players. The system should support the following functionalities:

1. Adding players to teams
2. Displaying and querying player and team information
3. Storing all data in a file for future use.

B. Requirements:

B.1 Team Management:

- a. Create a structure representing a football player (**struct Player**) with attributes: player_name, player_number, player_position, goals_scored, goals_conceded, number_of_minutes_played. Similarly, you need to create a structure for a football team **struct Team**. You need to identify the attributes of this structure.
- b. Implement a function **addPlayerToTeam(parameters)** to add a player to a team. The function should validate if the team has reached the maximum number of players (each team can have 20).
- c. Implement the function **updateTeam(parameters)** to update stats such as goals scored(if player position == MID or FWD) or goals conceded(if player position==DEF).
- d. Implement functions to display and query information about a player (**displayPlayer(parameter)**) and a team (**displayTeam(parameter)**).

B.2 File Handling:

- a. Implement functions to save team information to a file (**saveTeamsToFile(parameters)**) and load team information from a file (**loadTeamsFromFile(parameters)**). The file should contain information about each team, including its players. The file name should be "football_database.txt"

B.3 User Interaction:

- a. Create a simple menu-driven interface that allows users to interact with the Football Database Management System.
- b. Provide options for adding players to teams, displaying player and team information, saving the data to a file, and loading the data from a file.
- c. Users can also see statistics such as most goals scored and least goals conceded along with the team name.
You need to store these statistics in a separate file called "stats.txt".

B.4 Constraints to consider:

- a. Each team can have a maximum of **20** players.
- b. The system should support a maximum of **10** teams.

C. Submission Guidelines:

- You can use multiple .c files in your project but make sure to create only one main.c file.
- You need to upload the zipped version of your project files. Rename it with your student ID.
- Deadline: Sat, 4 May 2024 lab time.
- There will be a viva (probably online) on the project. So, make sure you understand your code and can explain it fully.