

# NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES

**(KARACHI CAMPUS)**

**FAST School of Computing Fall 2023**

# CS-2001 DATA STRUCTURES

**Project Proposal: LOG (LEAGUE OF GLORY) Advance Management System**

# GROUP MEMBERS:

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**Introduction:**

Organizing a large-scale event like League of Glory involves handling vast data, including team details, game details, match results, player statistics, and team performances. The manual processes to store all this currently in operation lead to never-ending errors, delays, and inefficiencies, making it time-consuming and unorganized. The need for an Advanced Management System arises to automate these processes, minimize human error, and provide a centralized platform for managing and retrieving event-related information and game statistics.

**Program OverView:**

**Classes:**

Team Class: Represents a team and likely includes attributes such as team name, list of players, etc.

Game Class: Represents a game and might include details like date, opponents, scores, etc.

Player Class: Represents an individual player with attributes like name, position, statistics, etc.

**Stack Logic:**

Used to build a menu of teams and their players. This implies a hierarchical structure where you can navigate through teams and players using a stack-based approach.

**Heap Functions and Priority Queues:**

Used to identify and print the top 5 players. This suggests that player statistics or some performance metric is being considered, and a priority queue (likely implemented as a heap) is used to efficiently retrieve the top players.

**File Handling:**

Our filing is displaying all player stats. This could include opening, reading, and writing to files in the chosen programming language.

**Linked Lists:**

Linked lists are used to print output on the console. This might involve creating a linked list of teams, players, or game details, and traversing through the list to display information.

**Recursion:**

Recursion is used in the project. Recursion involves a function calling itself, and it's likely used for solving a problem in a divide-and-conquer manner.

**Forward Declaration:**

This concept is often used in languages that require functions or classes to be declared before they are defined. It helps in resolving dependencies between classes or functions.

**Conclusion:**

In conclusion, our project is a management system which will help to organize player’s data , manage scores and keep a record of team members and their positions in League Of Glory. Our data is saved in the most efficient manner because it includes basic dsa methods.