Zero League Football Application - Overview Report

# 1. Introduction

The Zero League Football Application is a simple Java-based program designed to manage football teams, players, coaches, and matches. It provides functionality to load team data from files, organize teams, and simulate matches through a graphical user interface (GUI).

# 2. Classes Overview

## 2.1 Team

The Team class represents a football team. Each team has the following components:  
- A name (String)  
- A coach (Coach object)  
- A list of players (ArrayList<Player>)  
  
Key methods include:  
- getName(): returns the team’s name  
- getCoach(): returns the coach object  
- getPlayers(): returns the list of players  
- toString(): returns the team’s name for display purposes

## 2.2 Player

The Player class represents an individual football player. Each player has:  
- A name (String)  
- A position (String, e.g., Goalkeeper, Defender, Midfielder, Forward)  
  
Key methods include:  
- getName(): returns the player’s name  
- getPosition(): returns the player’s position  
- toString(): returns the player’s name for display

## 2.3 Coach

The Coach class represents the coach of a team. Each coach has:  
- A name (String)  
- An experience level (String)  
  
Key methods include:  
- getName(): returns the coach’s name  
- getExperience(): returns the coach’s experience level

## 2.4 Match

The Match class represents a football match between two teams. It includes:  
- A home team (Team)  
- An away team (Team)  
- A date (LocalDate)  
  
Key methods include:  
- simulateMatch(): randomly generates a result between the two teams  
- getResult(): returns the match result as a String

## 2.5 FileHandler

The FileHandler class is responsible for reading and writing team data from files. It parses structured text files to create Team, Player, and Coach objects, and returns a list of teams that can be used by the application.

## 2.6 LeagueGUI

The LeagueGUI class provides the graphical user interface for the application. It allows users to:  
- View teams loaded from files  
- Select home and away teams for a match  
- Simulate matches and display results  
  
It uses JComboBox for team selection, JButton for actions, and JTextArea for showing match results.

# 3. Application Workflow

1. The application starts by loading team data using FileHandler.  
2. Teams are created with their coach and players.  
3. The LeagueGUI initializes, showing dropdowns for selecting home and away teams.  
4. The user selects two teams and clicks the 'Simulate Match' button.  
5. The Match class generates a random result.  
6. The result is displayed in the GUI.

Links of both video & github

[https://github.com/shehabosama1](https://github.com/shehabosama1/Zero-league-football-system)

[https://drive.google.com/drive](https://drive.google.com/drive/folders/1jyQf7Kc3SuzdEQZuUOfkgUwMetI-7UIk?usp=sharing)