

# CIS450 Project Outline

*FIFA17 vs. FIFA22*



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## Description

This application serves as an interface for FIFA players that allows them to find different statistics and information about players, nations, and clubs in FIFA22 and FIFA17. Some of the data is being processed to cover only FIFA22, since it is the currently active game, as in top players, most expensive players, top players by attribute, etc. Other features, however, which represent the majority of this application, use the intersection of the two datasets to produce interesting facts about the last 5 years of FIFA: differences in wage, top important attributes, average overall rating of national teams in 2017 vs 2022, etc. The information in the two datasets, FIFA22 and FIFA17, allow for a space of creativity in queries and, thus, services provided to the user.

## Confirmed Features

- Search for players by name, attribute, nation, or club
- Player development - all available attributes for a player in FIFA22 vs FIFA17
- National Team Stats - statistical comparison about players in a national team (average overall, best eleven<sup>1</sup>, average value, average salary, etc.) in both FIFAs
- Club Stats - statistical comparison about players in a national team (average overall, best eleven, average value, average salary, etc.) in both FIFAs
- Where are they now? - statistics about player development from FIFA17 to FIFA22 with respect to their expected potential in FIFA17.

## Extra Features (To be implemented if time permits)

- Relationship between player body type and their agility and balance attributes
- League comparisons: top leagues based on player value, wage, etc. (This would need extra work on the dataset to manually gather clubs in the same league since the datasets do not offer 'league' attribute)
- League vs National Team: comparisons between each league and its corresponding national team (e.g. Premier League and England National Team) based on players overall.
- International Reputation (IR) vs. Player Statistics - Do players with high IR necessarily have the best overall rating?

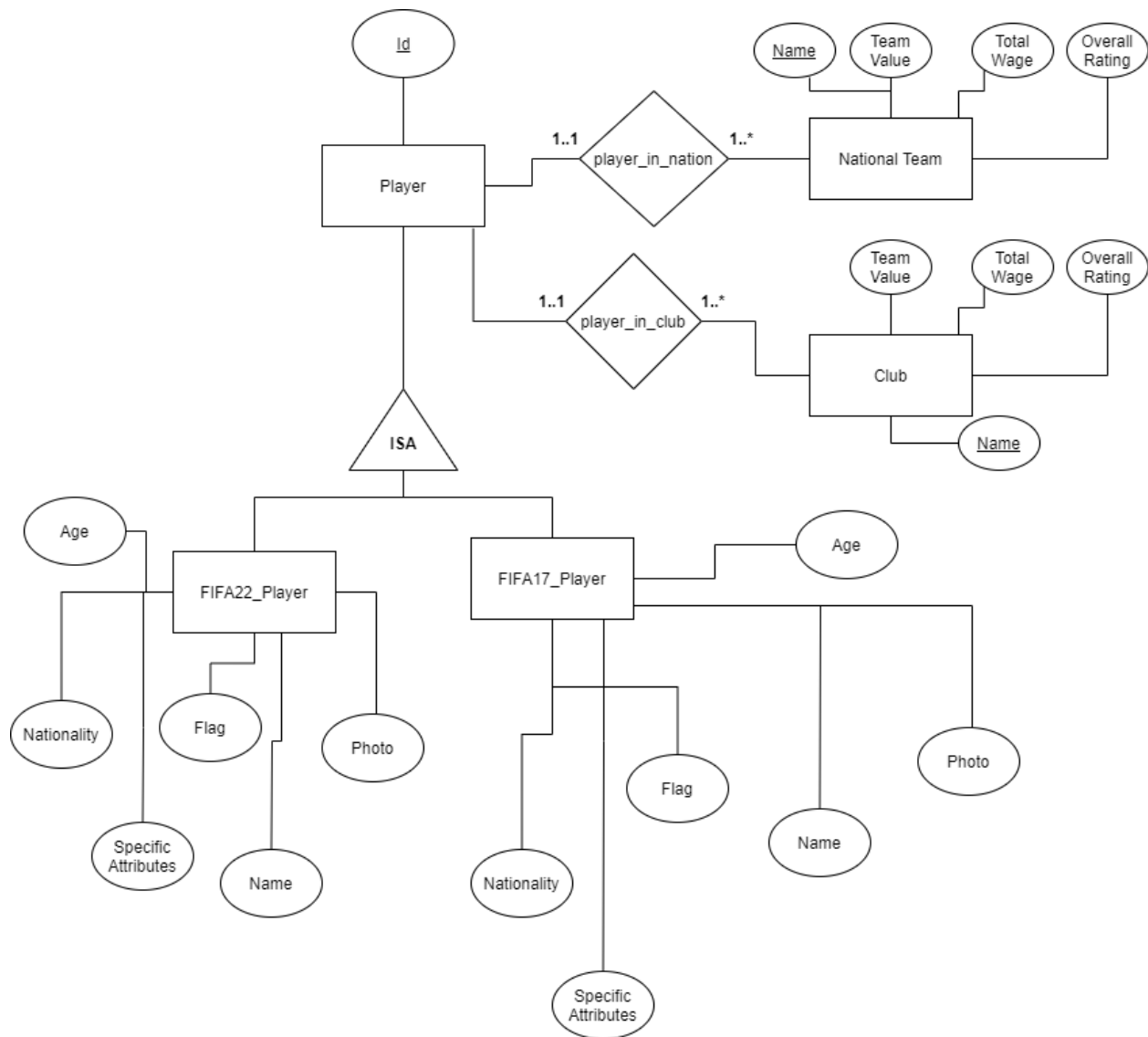
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<sup>1</sup> Best Eleven: Top player in each position of the eleven positions in the field

## Pages

- **Player Search:** allows users to search for a player by name, a specific attribute(s), nation, or club. The page refreshes after the search query is executed and shows a brief view of players who match the query. If a player is clicked, the next page “Player Statistics” is displayed.
- **Player Statistics:** displays a comparison of player attributes between his version in FIFA17 and FIFA22
- **Nations:** allows users to select a nation, and then displays interesting statistics about the national team in FIFA17 and FIFA22 (e.g. best 11, average player value, average age, oldest/youngest player)
- **Where Are They Now?:** displays top players who made it and top flops. That is, a statistical overview of players who did/did not meet their anticipated potential back in 2017. This is determined by the relationship between potential and development (development = FIFA22 Overall Rating - FIFA17 Overall Rating). This is shown for every club and nation based on user choice.

## Relational Schema (ER Diagram)



## SQL DDL Statements

Player\_2017 (Id, Name, Team\_Name, Club Age, Nationality, Flag, Specific\_Attributes, Name, Flag, Photo)

Player\_2022 (Id, Name, Team\_Name, Club Age, Nationality, Flag, Specific\_Attributes, Name, Flag, Photo)

FOREIGN KEY Team\_Name References National\_Team (Name)

FOREIGN KEY Club\_Name References Club (Name)

National\_Team (Name, Team\_Value, Total\_Wage, Overall\_Rating)

Club (Name, Club\_Value, Total\_Wage, Overall\_Rating)

## Cleaning and Preprocessing Data

- Remove unnecessary attributes:  
Special, preferred foot, weak foot, real face, work rate, jersey number, position, joined in, loaned from, contract valid until, best overall rating, release clause, defensive awareness
- Attributes included for players:  
Age, Height, Weight, Potential Overall, Club, Flag, Value, Wage, Skill Moves, Best Position, Crossing, Finishing, HeadingAccuracy, ShortPassing, Volleys, Dribbling, Curve FKAccuracy, LongPassing, BallControl, Acceleration, SprintSpeed, Agility, Reactions Balance, ShotPower, Jumping, Stamina, Strength, LongShots, Aggression, Interceptions Positioning, Vision, Penalties, Composure, Marking, StandingTackle, SlidingTackle GK Diving, GK Handling, GK Kicking, GK Positioning, GK Reflexes, Best Position, Best Overall Rating
- Considering changing accents in player's name to equivalent letter without accent (so that searching is easier by name for the user)
- Remove players who are not in the two games. (Unifies the IDs and excludes players who have retired/just joined)
- Designed the ER diagram to fit the constraint that players are allowed to change teams.

## Technologies Used

- MySQL
- Python (Pandas) - cleaning and preprocessing
- React for Front-end

## Group Members' Responsibilities

1. Alejandro Resendiz: Help with backend queries.
2. Ali Crema: Data cleaning and preprocessing with pandas and importing data into the database. Setting up the backend JS queries.
3. Armaan Uppal: Splitting front end with Julia
4. Julia Kafozoff: Leaning towards Front end