

Project Proposal

FIFA VizPlay

Project Name : FIFA VizPlay

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Project repository : <https://github.com/dataviscourse2023/final-project-fifa-vizplay>

Background and Motivation. Discuss your motivations and reasons for choosing this project, especially any background or research interests that may have influenced your decision.

As we all know, Football is one most famous sport which is often referred to as the "beautiful game", stands as a universal language, uniting individuals across different corners of the globe. As the sport enjoys an immense following, there exists a substantial group of enthusiasts who are keen to dive deep into the intricacies of the game, exploring beyond just the goals scored and matches won. This project proposal seeks to satisfy this curiosity, offering not just a statistical dive into the world of football but an interactive and engaging visualization of data, enhancing the user's understanding and appreciation of the game.

So our primary motivation behind this project is our genuine interest in the game of football, a sport that brings together people from diverse backgrounds and fosters a sense of community. We as a team thought that we can go beyond traditional metrics and venture into more detailed analyses, thus providing more depth to the narratives surrounding the sport. In order to do this we are planning to utilize the vast FIFA player dataset and our aim is to offer users the opportunity to explore and analyze a plethora of variables ranging from player performances, match outcomes, to intricate details like player's physic and skills metrics. The project is also inspired by our intent to show the sports analytics, offering innovative, insightful, and visually appealing interpretations of data that can cater to both avid football enthusiasts and researchers alike.

Project Objectives. Provide the primary questions you are trying to answer with your visualization. What would you like to learn and accomplish? List the benefits.

The primary objective of our project is to delve deep into the FIFA player dataset to carve out interactive and insightful visualizations that can facilitate a more enriched understanding of the game of football. Our main aim is to address critical questions such as identifying the top players based on various metrics like attack, defense, and shooting scores, and understanding the trends in goals scored across different countries over the years. This project intends to create a dynamic platform where users can explore data interactively, providing a concrete base to football discussions which are often driven by personal opinions.

Furthermore, this visualization venture stands as a beneficial tool for football enthusiasts, researchers, and analysts, offering a data-backed approach to analyzing and appreciating the multifaceted nature of football. By facilitating detailed comparisons and analyses through interactive graphs, it opens up new avenues in the field of sports analytics. Essentially, this project seeks to enhance the community's comprehension of the sport, paving the way for informed, data-driven discourse and fostering a new wave of engagement in the football community.

Data. From where and how are you collecting your data? If appropriate, provide a link to your data sources.

For our project, we are utilizing comprehensive datasets pertaining to the FIFA player database to formulate a rich and detailed analysis. The first dataset harbors an array of information focused on match specifics, encompassing various identifiers such as match_id, team_id, player_id, among others, providing us with an expansive view into the various tournaments and player dynamics within each match. The second dataset, on the other hand, offers a deep dive into individual player statistics and traits, including data columns that outline a player's skills, career trajectory, and market value, facilitating a nuanced analysis of player competencies and standings in the world of football. The combination of these datasets will be instrumental in developing an interactive visualization tool that fosters a deeper understanding and engagement with the sport, by allowing users to explore and analyze player performances and trends in a more immersive manner.

Dataset - <https://www.kaggle.com/code/sivsankar/fifa22-recommender-system/input>

Data Processing. Do you expect to do substantial data cleanup? What quantities do you plan to derive from your data? How will data processing be implemented?

Before we delve into the analysis, we anticipate undertaking a significant data cleanup process to ensure the integrity and reliability of our visualization project. This will involve identifying and handling missing or inconsistent data entries, as well as merging the two datasets harmoniously by linking relevant columns such as player IDs and team IDs. Moreover, we aim to derive meaningful insights from the data by calculating metrics such as player performance scores based on various attributes, and aggregating goal statistics on a yearly and country-wise basis. The data processing will be implemented using robust data manipulation libraries and tools, allowing us to efficiently filter, transform, and prepare the data for a seamless visualization experience.

Visualization Design :

Potential quantities and insights that we aim to derive from the dataset:

Player Performance Metrics:

- Overall and potential player ratings.
- Player age, height, weight, and nationality distribution.
- Player preferred foot, weak foot, and skill moves.

Player Comparison:

- Comparisons of players based on various attributes (e.g., pace, shooting, passing).
- Clustering or grouping of players with similar skill sets.

National Team Analysis:

- Analysis of players representing their national teams.
- Distribution of players across different national teams.
- Performance metrics of national teams.

Trends and Patterns:

- Changes in player attributes over time.
- Correlations between player attributes and performance.

Visualizations:

- Creating charts, graphs, and visualizations to help convey insights more effectively.

Player and Club Profiles:

- Creating profiles for individual players or clubs that summarize their key statistics and attributes.

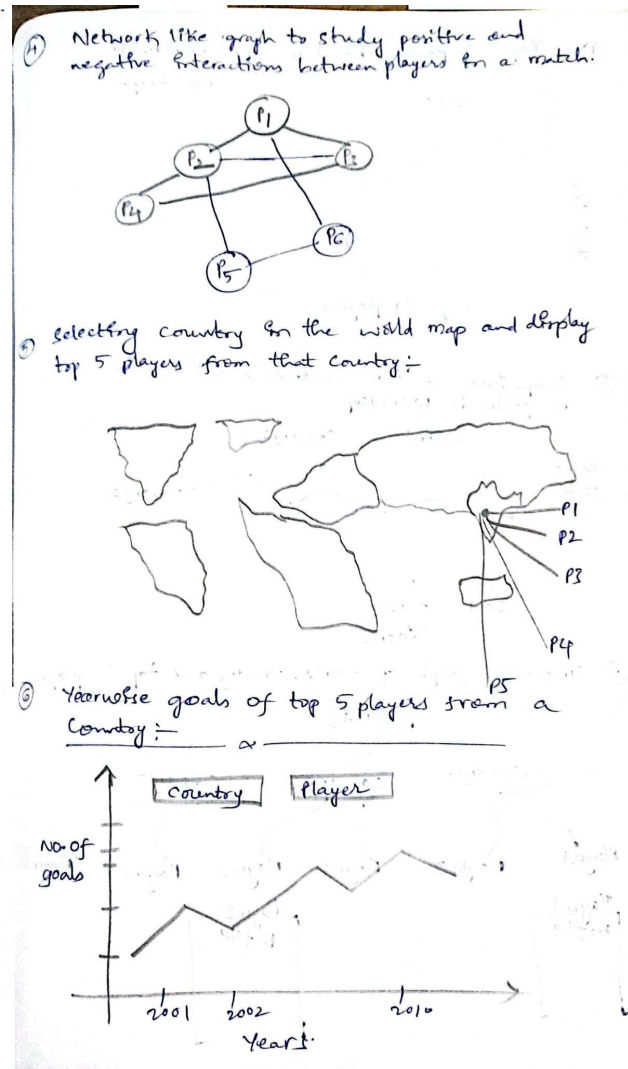
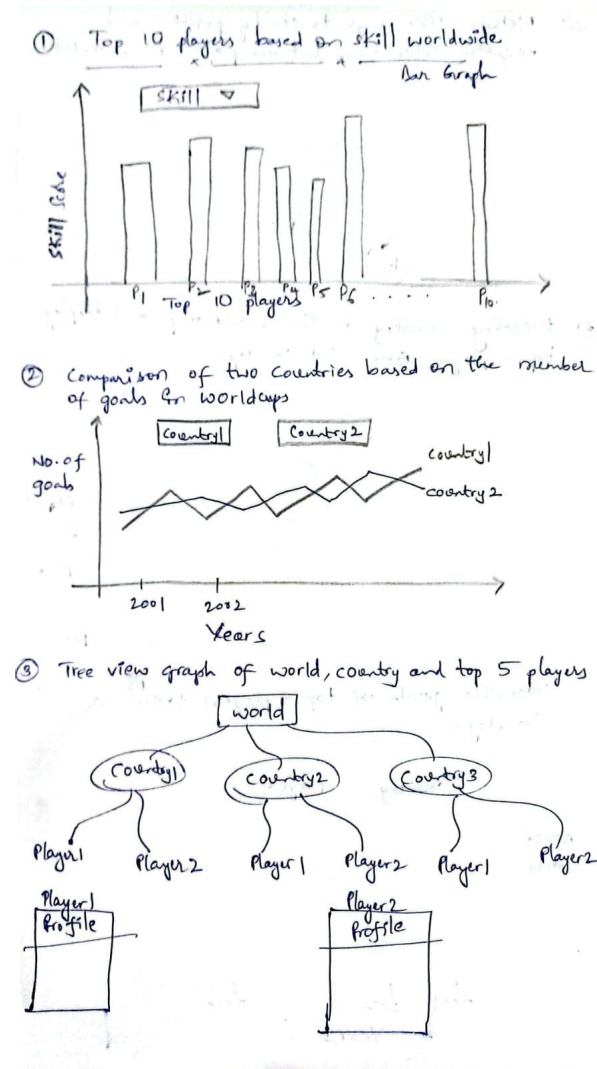
Club-Level Insights:

- Club-wise statistics, such as average player ratings.
- Club budgets based on player values and wages.
- Analysis of club positions in the league.
- Distribution of players across different club positions.

League-Level Insights:

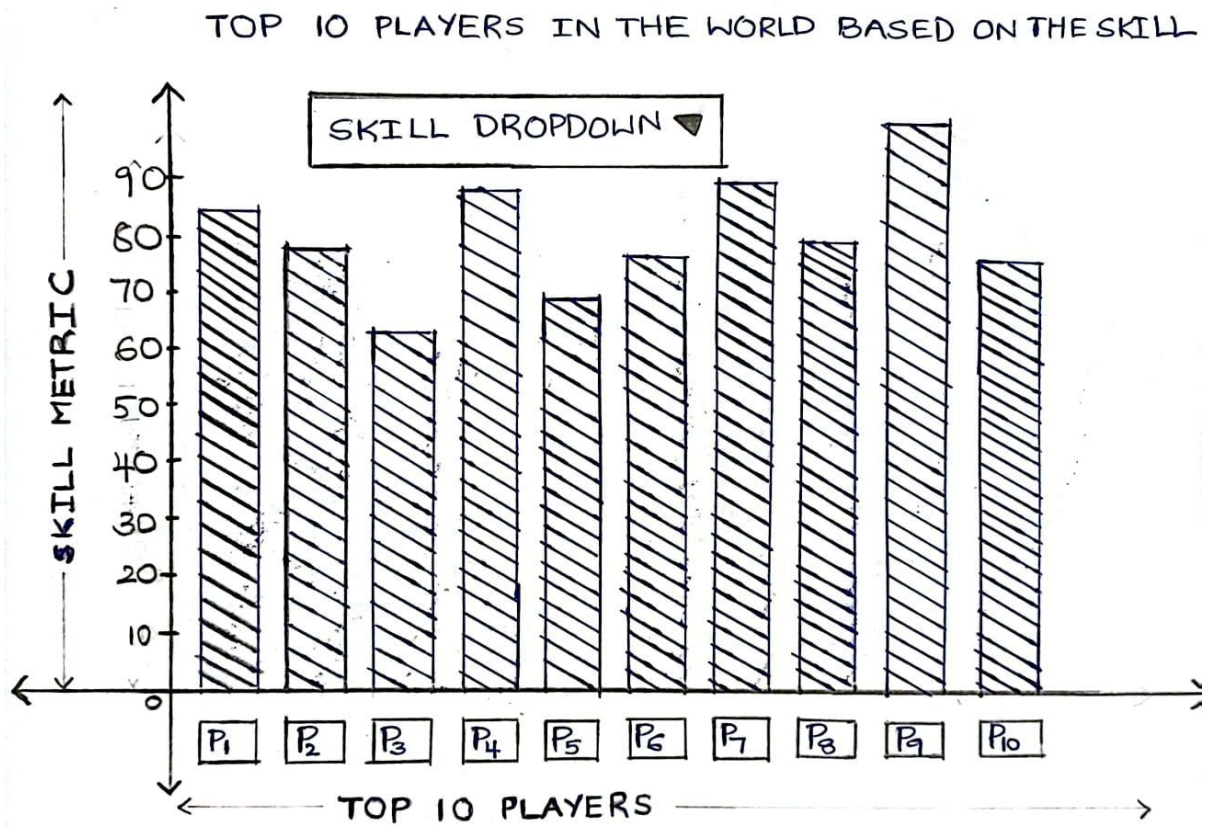
- Analysis of leagues based on the level (e.g., top-tier, second-tier).
- Statistical summaries of leagues, including average player ratings, ages, etc.

We came up with the initial designs as follows :

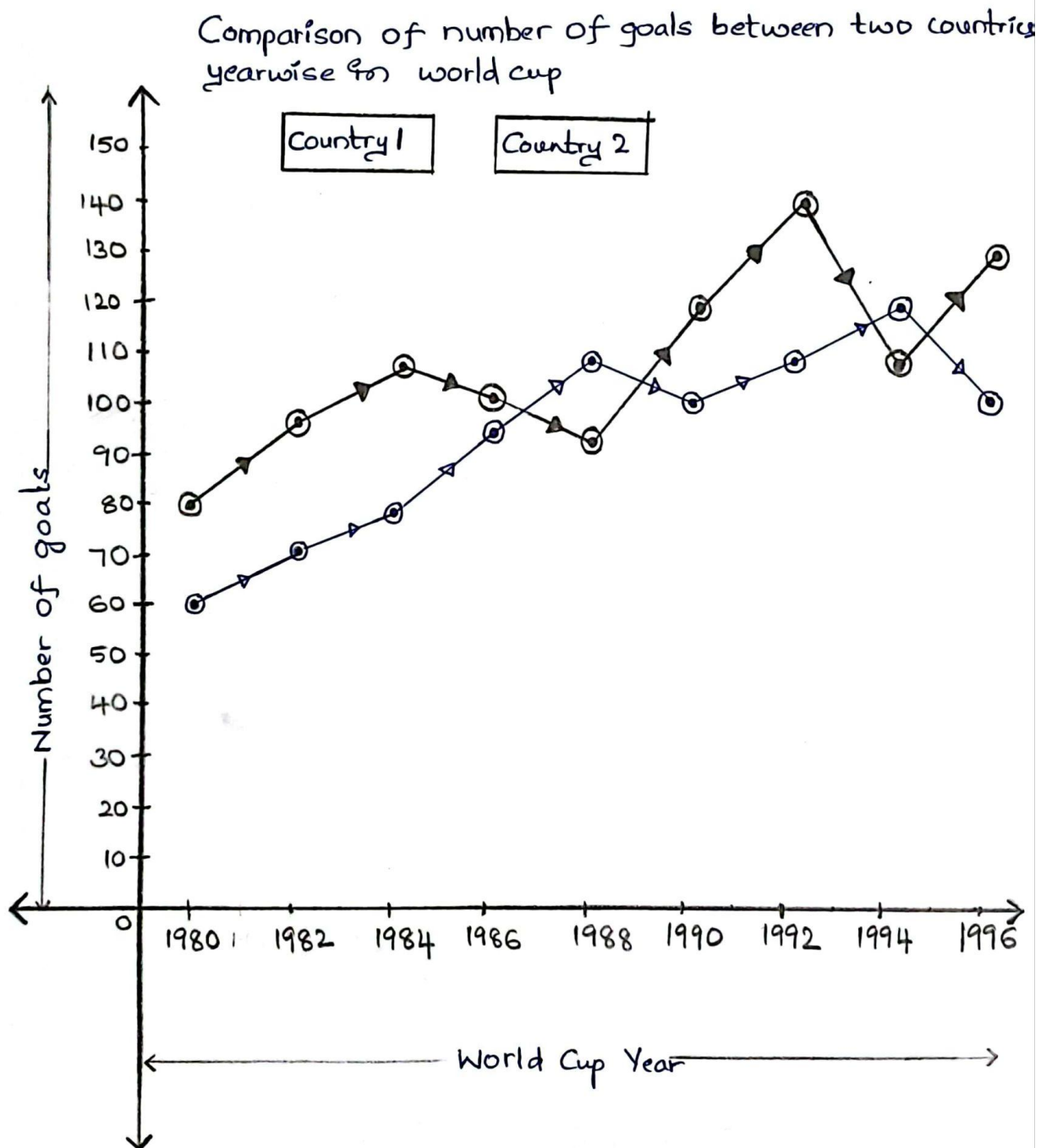


These are our Final Design sketches :

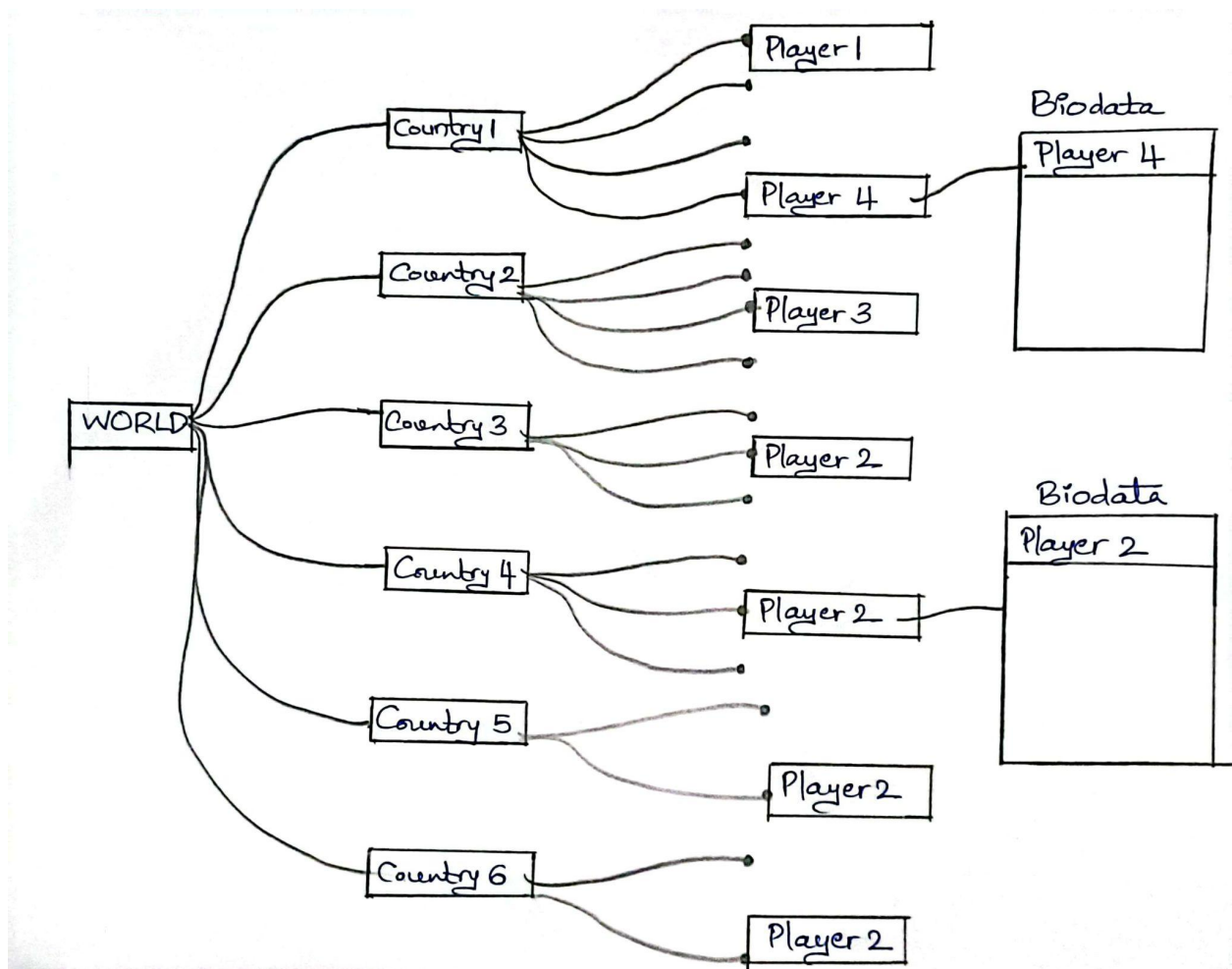
Sketch 1:



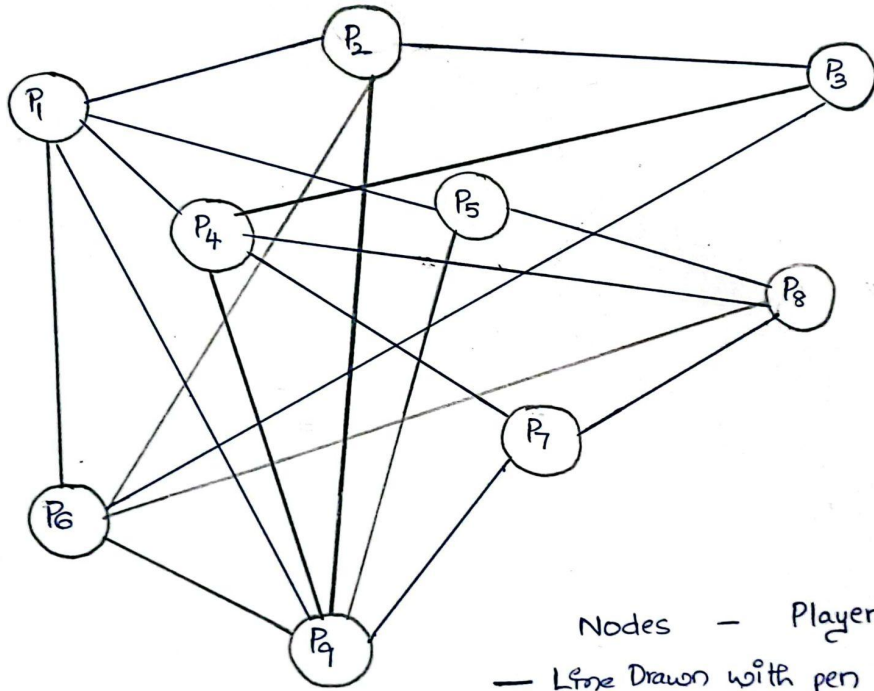
Sketch 2:



Sketch 3:

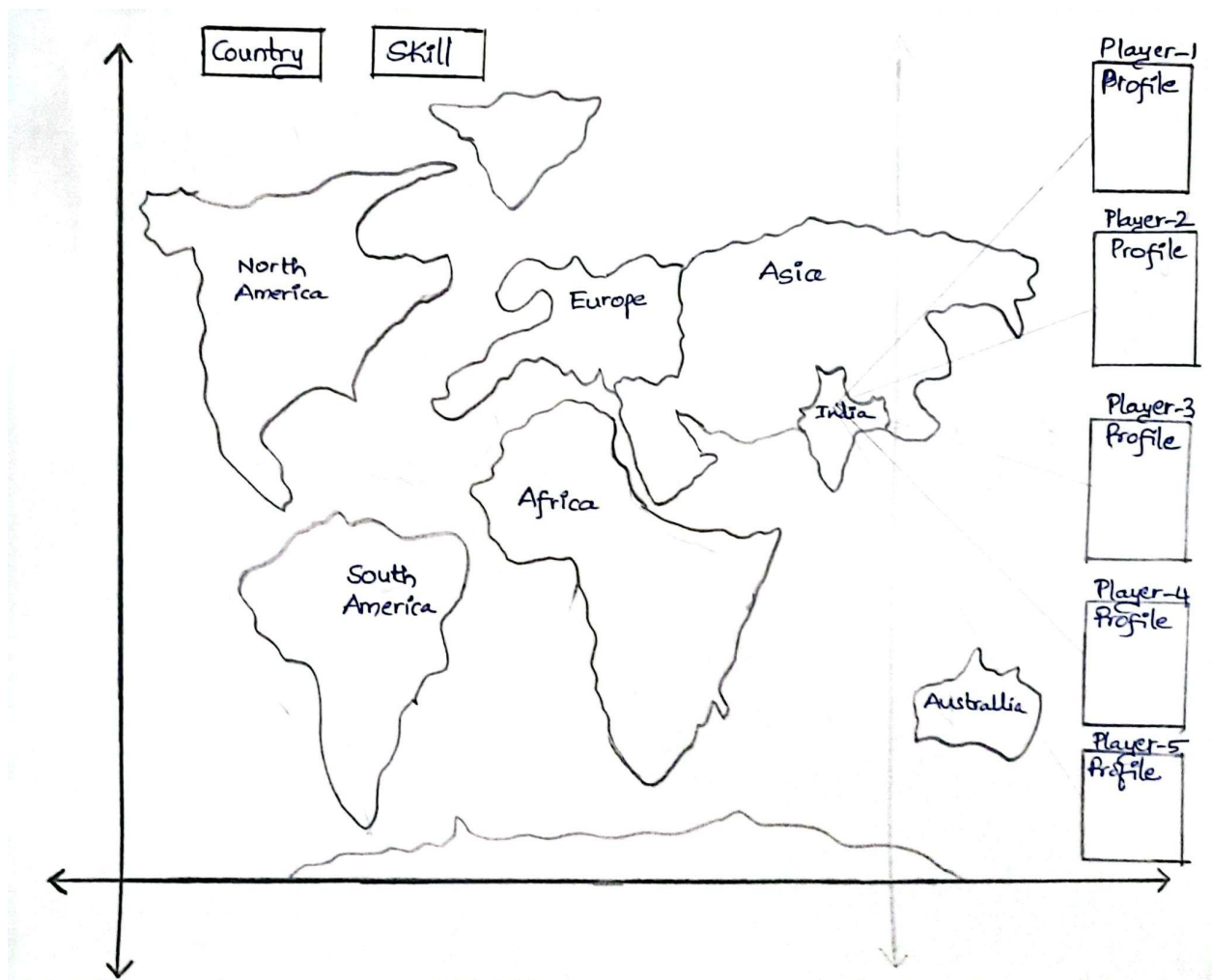


Sketch 4:

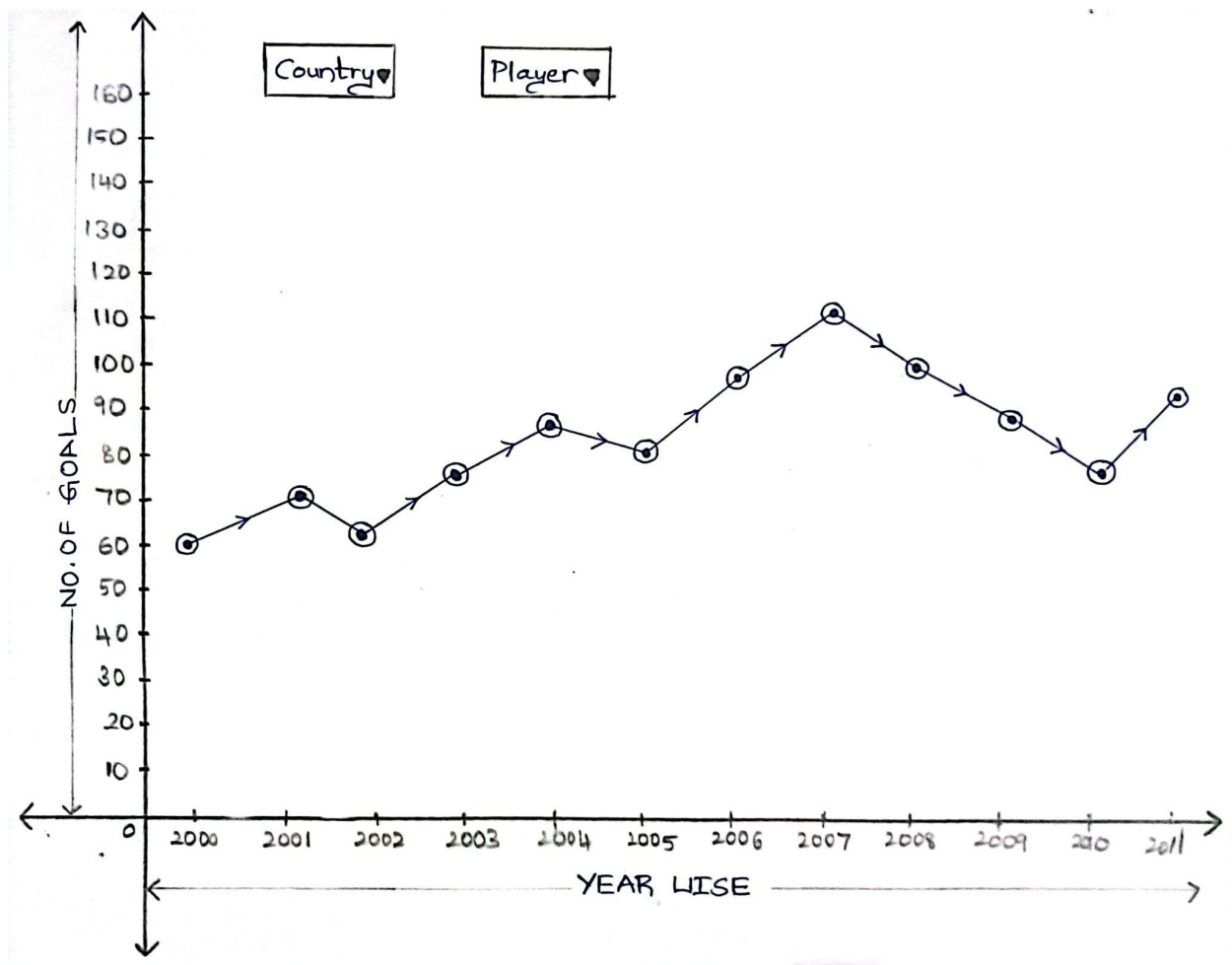


Nodes — Players
— Line Drawn with pen — Positive Interaction
— Line Drawn with pencil — Negative Interaction

Sketch 5:



Sketch 6:



Must-have Features:

- Analyzing Player Attributes Data: This includes essential player attributes like overall rating, potential, age, position, preferred foot, and skill moves.
- Analyzing the diversity of players and their representation at the national level.
- Player Comparisons: A feature that allows users to compare the statistics of multiple players can be helpful for making informed decisions or assessing player performance relative to peers.
- Allowing users to customize the view, select specific metrics, or set preferences improving the user experience.

Goals Scored by Player:

- Calculate the total number of goals scored by each player in the dataset.

- Create visualizations or tables that rank players based on their total goals scored. This can help identify top goal-scorers.

Goals Scored by Country/National Team:

- Aggregate the goal-scoring data for players based on their nationality or national team affiliation. This will give you the total goals scored by each country's players.
- Create rankings or visualizations that show which countries have the highest total goals scored by their players.
- Explore trends over time to see how a country's goal-scoring performance has evolved.

Optional Features:

- Social Media Links: Linking to players' social media profiles or club social media accounts can be a way to provide additional context or connect users with more information.
- Player Images and Faces: Including player images or faces can make your project more visually appealing, but it's not essential for the analysis itself.
- Player Traits and Tags: If available, including player traits and tags can provide more detailed insights into player characteristics and playing styles.
- Predictive Modeling: Building predictive models to forecast player performance or market value is a valuable but optional feature.

Planning:

- **Phase1 : To complete atleast 2 visualizations by sep 31.**
 - Gather feedback on the initial visualizations.
 - Make necessary improvements based on feedback.
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- **Phase 2: Additional Development (By October 31):**
 - Analyze additional data if needed.
 - Prepare for the development of the next two visualizations.
 - Develop the third visualization.
 - Develop the Fourth visualization.
- **Phase 3: Refining in November**
 - Implement Interactivity
 - Gather feedback and optimize
 - adding additional visualizations if possible