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| **Ontology Requirements Specification Document** | |
| **1** | **Purpose** |
|  | The purpose of our ontology is to organize football-related knowledge, offering a structured framework for easy access and analysis. By organizing player details, team attributes, match data, and more, this ontology aims to provide a user-friendly resource for football enthusiasts, analysts, and researchers. |
| **2** | **Scope** |
|  | **Player Attributes:**   * Basic Information: Name, Date of Birth, Nationality, and preferred Playing Position * Performance Metrics: Goals, Assists, Tackles, Dribbles   **Team:**   * Basic Information: Name of Team, Country, League, Formation * Ranking: Current ranking in the league, Ranking in tournament, Number of titles,   **League**:   * Scope: Only Top 5 Leagues of Europe (Bundesliga, Premier League, La Liga, Serie A, and Ligue 1), Table (Ranking), Number of teams, Start-End Date, Results, * Tournaments: Coverage of major tournaments such as FIFA World Cup, UEFA Euro Cup, Champions Leauge, Europa League, Conference League,   **Match:**   * Match Metadata: Date, Kick-Off times, Details such as League Game or Cup Game and which teams played against each other, * Match Events:Goals, Fouls, Yellow and Red Cards, Pass Accuracy   **Referee:**   * All referees from that specific league (Top 5 leauges) including assistant referees, Name, Age, Nationality, the matches they officiate,   **Coach:**   * All team (club) coaches of the top 5 leagues, Coaching history, Current team, Coaching style (tactical approach, pereferred formation) |
| **3** | **Implementation Language (optional)** |
|  | The ontology will be implemented using OWL (Web Ontology Language), a standard language for representing ontologies on the web. WebVOWL (Web-based Visualization of Ontologies) will be utilized for visualizing and exploring the ontology's structure and relationships. RDF (Resource Description Framework), it provides a simple way to describe resources and their relationships using triples. |
| **4** | **Intended End-Users (optional)** |
|  | * Researcher, Football Analysts, Football Administrator, Fans and Football Enthusiasts, |
| **5** | **Intended Uses** |
|  | The intended use of the football ontology is to provide a wide range of applications aimed at data management, analysis, and decision making in the football domain. The ontology serves as a knowledge representation framework, supporting the integration of diverse football-related data sources and enabling researchers, analysts, and other stakeholders valuable insights. The goal is to develop a standardized football ontology, which could be used for decision-making processes by providing knowledge about player performance, team strategies, and match outcomes. |
| **6** | **Ontology Requirements** |
|  | 1. **Non-Functional Requirements** |
|  | The ontology should be capable of handling large amount of data and queries. Performance benchmarks should be established to ensure system performance.  The ontology should be scaleable and able to grow in the future in terms of additional features, concepts, data sources, etc.  The ontology should be robust and easy maintainable. |
|  | 1. **Functional Requirements: Lists or tables of requirements written as Competency Questions and sentences** |
|  | * The list of competency questions can be found here: https://github.com/arditb1997/footology/tree/main/ORSD |
| **7** | **Pre-Glossary of Terms (optional)** |
|  | 1. **Terms from Competency Questions** |
|  | * Player’s specific Playing Position * Team’s ranking * Formation * Yellow and Red Cards * Player Performance * Player Awards * Goals * Stadium |
|  | 1. **Terms from Answers** |
|  | * Relation between Player and Team * Concept of "Performance Stats" * Relationship between Team and Trophy * SPARQL Queries * Relationship between Player and Award * Relationship between Team and Stadium |
|  | 1. **Objects** |
|  | * Player * Position * Team * Coach * Stadium * Award * Trophy * Stadium * Performance Stats |