Project title: Automated Sports Scores Dashboard: Empowering Real-time Data Analysis and Visualization

Introduction:

This proposal outlines the development of an automated system for retrieving and analyzing sports scores using the ESPN API. For a number of sports leagues, including the NBA, Premier League, La Liga, and others, the system attempts to give real-time scores and game information. This system will provide a practical and effective way for sports aficionados, experts, and fans to stay up to speed with the most recent results and statistics by utilizing the power of API integration and data processing.

Objectives:

- Develop a Python script to retrieve scores and game information from the ESPN API for multiple sports leagues.
- Implement league-specific classes that inherit from a base class, allowing for extensibility and easy integration of new leagues.
- Process the retrieved data to extract relevant information, such as team names, scores, game status, and dates.
- Utilize the pandas library to present the scores and game information in a tabular format for easy readability.
- Export the retrieved data to CSV files, enabling users to store and analyze the scores offline.
- Integrate the system with Jenkins for automated updates and scheduled execution of the Python script.

Methodology:

- **API Integration**: Utilize the ESPN API to fetch scores and game information for various sports leagues. Implement the necessary API calls and handle the JSON responses in the Python script.
- **Object-Oriented Design**: Develop a modular and extensible architecture using classes to represent different sports leagues. Implement inheritance to promote code reuse and flexibility in adding new leagues.
- **Data Processing**: Extract relevant information from the retrieved data, such as team names, scores, game status, and dates. Structure the data in a consistent format for further analysis and presentation.

- **Tabular Presentation**: Utilize the pandas library to create dataframes and present the scores and game information in a tabular format. Enhance readability by formatting the tables and including relevant column headers.
- **CSV Export:** Implement functionality to export the retrieved data to CSV files. Store the data in a structured manner, allowing users to perform offline analysis, generate reports, or integrate it with other tools..

Deliverables:

Python script for automated retrieval of sports scores from the ESPN API.
League-specific classes for popular sports leagues, including the NBA, Premier League, La Liga, and more.
Tabular presentation of scores and game information using the pandas library.
Export functionality to save scores data in CSV format for offline analysis.

Timeline:

Week 1:
- API Integration and Data Retrieval
- Object-Oriented Design and Development of League Classes

Week 2:
- Data Processing and Tabular Presentation
- CSV Export

Week 3: Testing, Bug Fixing, and Documentation
Week 4: Finalization and Delivery

Conclusion:

The proposed automated sports scores retrieval and analysis system leveraging the ESPN API provides a powerful solution for staying updated with the latest scores and game information. By implementing an extensible architecture, tabular presentation, and CSV export functionality, the system offers flexibility and convenience to sports enthusiasts and analysts. The integration with Jenkins ensures regular updates and effortless execution of the script, enhancing the system's automation capabilities. This project aims to empower users with timely and accurate sports scores while fostering a passion for data-driven analysis in the world of sports.