"Decoding the Digital Pitch": A Deep Dive into FIFA 2022 Players Performance using Machine Learning Techniques.

# Project Overview:

The objective/aim of this project is to compare and analyze the performance levels of FIFA 2022 game players with real-time world players, identify areas for improvement, and enhance the game's performance levels and overall gaming experience.

# Standards:

* Data Integrity: Ensure the accuracy, completeness, and reliability of the data collected from both FIFA 2022 game players and real-world players.
* Performance Evaluation Metrics: Establish clear and measurable performance evaluation metrics to assess the proficiency and effectiveness of FIFA 2022 game players, considering factors such as goals scored, assists, pass accuracy, player ratings, and overall game statistics.
* Visualization and Reporting: Present the project findings and insights through clear, informative, and visually appealing charts, graphs, and reports to facilitate understanding and decision-making.
* User Experience Improvement: Identify areas of improvement in the game's performance levels based on the comparison with real-time world players and propose recommendations to enhance the gaming experience for players.

# Objectives:

* Gather Real-Time Data: Collect real-time data on FIFA 2022 player performances, including player statistics, match outcomes, and in-game events.
* Dataset Compilation: Create a comprehensive and unique dataset comprising real-time player performance data from FIFA 2022 matches.
* Data Cleaning and Preprocessing: Perform thorough data cleaning and preprocessing steps to ensure the dataset's quality and consistency.
* Feature Engineering: Extract relevant features from the dataset to capture player performance metrics, such as goals scored, assists, passing accuracy, and dribbles completed.
* Performance Analysis: Conduct in-depth analysis of player performances, including individual player analysis, team performance analysis, and comparative analysis between different players or teams.
* Predictive Modeling: Build predictive models to forecast player performance based on historical data and real-time factors such as player form, injuries, and match conditions.
* Performance Evaluation: Evaluate and validate the accuracy and effectiveness of the predictive models by comparing the predicted player performances with actual performance outcomes.
* Recommendations and Strategies: Provide actionable recommendations and strategies for players, coaches, and team management based on the analysis and insights derived from the real-time player performance data.

# Requirements/Task(s):

Task 1: Collect a diverse dataset comprising FIFA 2022 game player performance data and real-time world player performance data.

Task 2: Clean the collected data, handle missing values, remove outliers, and ensure data consistency and quality.

Task 3: Extract relevant features from the dataset to capture player performance levels, such as goals, assists, dribbles, pass completion rate, and player ratings.

Task 4: Merge the FIFA 2022 game player performance data with the real-time world player performance data, aligning corresponding players and their attributes.

Task 5: Perform exploratory data analysis to gain insights into the distribution, trends, and patterns within the dataset, comparing FIFA 2022 game players with real-time world players.

Task 6: Use machine learning algorithms to compare the performance levels of FIFA 2022 game players with real-time world players, considering player attributes and performance metrics.

Task 7: Develop machine learning models, such as regression, classification, or clustering models, to predict or classify player performance levels based on the dataset.

Task 8: Split the dataset into training and testing sets, train the machine learning models using the training set, and evaluate their performance on the testing set using appropriate metrics.

Task 9: Deploy the trained machine learning models into the FIFA 2022 game environment to enhance performance levels and gaming experience.

Task 10: Document the entire process, including data collection, preprocessing, feature engineering, model development, evaluation results, and recommendations, in a comprehensive report.

# Record your notes/research here:

I have started collecting the preliminary data for the project dataset and searching for the real time players information from the resources on google search and FIFA Game websites and EA sports authority.

# Outline the steps/plan for your project:

Overall, the outcomes of the project aim to bridge the gap between FIFA 2022 game players and real-time world players, improve the game's performance levels, and provide actionable insights for enhancing the overall gaming experience.

Regular updates and patches are crucial to continuously enhance the game's performance, address bugs, and introduce new features based on user feedback and emerging trends.

# Summarize what you learned:

Throughout the project, I have learned how to collect and integrate data from FIFA 2022 game players and real-time world players. I have gained insights into the performance levels and identified gaps between the two groups. Using machine learning techniques, I need to develop models to predict and classify player performance levels. By comparing and analyzing the data, I need to provide valuable recommendations for improving the game's performance levels and enhancing the overall gaming experience. I have also learned the importance of regular updates, incorporating user feedback, and staying current with emerging trends and technology to continuously refine the game and meet player expectations.

# Add the link to your project here:

Dataset link: <https://sports-statistics.com/sports-data/fifa-2022-dataset-csvs/>

Real time players performance list: <https://www.ea.com/en-gb/games/fifa/fifa-22/ratings/ratings-database>

Game updates needed: <https://www.nme.com/news/gaming-news/ea-details-over-40-improvements-for-fifa-2022-alongside-a-new-trailer-3007431>