Conclusion

This project demonstrates the application of machine learning techniques to predict English Premier League match outcomes using historical performance data.
By experimenting with models such as Logistic Regression, Random Forest, and Support Vector Machines (SVM), and combining them through a consensus approach, the project achieved improved reliability and reduced single-model bias.

The process involved feature engineering, data balancing (SMOTE), cross-validation, and model interpretability (SHAP analysis) all key components of modern data science workflows.

While the subject matter focused on football analytics, the underlying techniques including pattern recognition, probability modelling, and predictive analytics are directly transferable to a wide range of business applications such as:

- Financial risk analysis
- Operational optimization
- Customer behaviour forecasting
- Strategic decision-making under uncertainty

This project highlights how data driven insights can support decision-making across industries, reinforcing the value of statistical modelling and machine learning in both sports and financial contexts.

Future enhancements could include integrating real-time data streams, advanced ensemble methods, and dashboard visualizations for better interpretability and deployment.