CONCLUSION

This project demonstrated the use of linear regression for predicting daily temperatures based on weather features like humidity, pressure, and wind speed. Through data preprocessing, feature extraction, and model training, we developed a predictive model and evaluated its performance. The results, assessed through metrics such as Mean Squared Error (MSE) and R-squared (R2), provided insights into the model's accuracy and explanatory power. Visualization of actual vs. predicted temperatures further illustrated the model’s effectiveness. Overall, the project showcased a practical approach to weather forecasting using machine learning, with potential for future enhancements in accuracy and feature complexity.

FUTURE SCOPE

The future scope of this project includes exploring advanced machine learning models such as Random Forests, Gradient Boosting Machines, or Neural Networks to improve prediction accuracy. Incorporating additional features like historical temperature trends and geographical data could enhance the model's performance. Applying time-series analysis techniques and integrating real-time data would enable dynamic and up-to-date forecasting. Further, optimizing the model through hyperparameter tuning and feature selection, along with developing a user-friendly interface, could make the model more effective and accessible. Expanding the model’s applicability to different geographic regions would also provide valuable insights for diverse locations.