Student Performance Prediction – Capstone Project (Offline)

INTRODUCTION:

This project predicts student exam performance using study hours, attendance, and previous marks.

A small offline dataset is used to enable analysis without internet access.

DATASET:

Columns: Hours, Attendance, PreviousScore, Marks

A handcrafted dataset of 15 rows is used.

OBJECTIVES:

- Analyze relationships between study patterns and marks.

- Build Linear Regression and Random Forest models.

- Evaluate performance using MAE, MSE, RMSE, and R^2 metrics.

METHODOLOGY:

1. Load local CSV dataset.

2. Explore features and correlations.

3. Train-test split (80–20 ratio).

4. Train Linear Regression and Random Forest models.

5. Evaluate with regression metrics.

6. Plot Actual vs. Predicted values.

CONCLUSION:

Random Forest performs better than Linear Regression.

Study hours and previous score are strong predictors.

Attendance contributes moderately to final marks.

This project is fully offline and suitable for academic capstone submission.