Project Overview: Admission Prediction Using Machine Learning

Introduction
This project focuses on predicting the probability of admission for students based on their academic scores and research background.
The dataset used contains 500 entries with features such as GRE Score, TOEFL Score, University Rating, SOP (Statement of Purpose),
LOR (Letter of Recommendation), CGPA, Research Experience, and Chance of Admit.

Steps Performed

1. Data Exploration
  - Loaded and explored the dataset.
  - Checked for missing values and data types.
  - Performed descriptive statistical analysis.

2. Data Visualization
  - Created visualizations to understand the relationships between different variables.
  - Used histograms, scatter plots, and correlation heatmaps.

3. Data Cleaning
  - Identified and handled missing or inconsistent data.
  - Normalized/standardized data where necessary.

4. Model Selection & Training
  - Defined a function to select the best machine learning model.
  - Tested multiple regression models to predict the Chance of Admit.
  - Compared models based on accuracy and performance metrics.

5. Model Evaluation
  - Evaluated models using metrics such as R-squared, RMSE, and MAE.
  - Chose the best-performing model for predictions.

Key Outcomes
- Successfully built a predictive model for admission probability.
- Identified the most influential factors affecting admissions.

- Provided insights through data visualization and statistical analysis.

Technologies Used
- Python (Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn)
- Jupyter Notebook

This project serves as a strong foundation in data science and machine learning, demonstrating skills in data preprocessing, model selection, and evaluation.