Lab 07

Write a Report on Understanding Ensemble Models

After carefully reviewing the Jupyter notebook ensemble_models.ipynb, write a structured report that demonstrates your understanding of the project. Your report should be clear, concise, and written in your own words.

Please structure your report to answer the following prompts:

1. Project Introduction & Goal

- What is the main objective of this machine learning project?

- What is the specific task the model is being built to perform?

2. Explaining Ensemble Learning

- In simple terms, what is an "ensemble model"?

- The notebook mentions three main categories of ensemble methods (Averaging, Boosting, Stacking). Briefly describe what each category does.

3. Data Exploration & Insights

- Describe the dataset used. What is the source and what does the target variable represent?

- Based on the Exploratory Data Analysis (EDA), what are **two key findings** about the data? (For example, discuss the distribution of the target variable or a relationship between features).

4. Methodology & Planned Workflow

- The notebook lists several specific ensemble algorithms to be implemented (e.g., Gradient Boosting, AdaBoost). Name two of them.

- The code for training the models is not shown. Based on a typical Scikit-learn workflow, what are the main steps you would take to train one of these models after the data is preprocessed?

5. Conclusion & Reasoning

- Why do you think ensemble models are a suitable choice for predicting electricity price changes?

- If you were to complete this project, what would be the most important thing to check to see if the model is successful?

Format:

- Your report should be approximately 500-700 words.

- Use the section headings provided above.

- Focus on demonstrating your understanding, not just copying text from the notebook.