Boot Camp on Artificial Intelligence

LAB ASSESSMENT PROBLEM

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Date of Submission: **Maximum Marks: 40**

Lab Assessment Problem Statement: Machine Learning – Predicting House Prices

Objective:

Develop a machine learning model to predict house prices based on various features such as square footage, number of bedrooms, location, and other property attributes. The goal is to create, train, and evaluate two models: a Decision Tree and a Linear Regression model.

Problem Statement:

You are provided with a dataset containing detailed information about real estate properties, including:

- **Target Variable**: Selling price of the house.
- **Features**: Area (square footage), number of bedrooms, bathrooms, number of stories, access to the main road, presence of guest rooms, basement, type of heating, air

conditioning, parking spaces, location preference, and furnishing status.

Your task is to:

1. Build regression models (Decision Tree and Linear Regression) to accurately predict house prices.
2. Perform exploratory data analysis (EDA) to understand, visualize, and present key insights from the data.
3. Use cross-validation techniques to optimize model parameters and enhance performance.
4. Compare and evaluate the models based on their predictive accuracy and other performance metrics.

Deliverables should include clear visualizations, detailed evaluation results, and insights gained from the modeling process.