❖ Project Name: Real Estate Price Prediction

- ❑ **1. Introduction / Objective**
  - *Predict property prices using ML*
  - *Features: Area, Bedrooms, Bathrooms, Age, Distance*
- ❑ **2. Dataset Overview**
  - *Dataset source & size*
  - *Columns/features used*

- ❑ **3. Exploratory Data Analysis (EDA)**
  - *Performed overall data analysis to understand dataset*
  - *Created Age Distribution chart*
  - *Analyzed Area Distribution*
  - *Counted Bedrooms and Bathrooms*
  - *Studied Distance to City Center Distribution*
  - *Visualized Price Distribution*
  - *Compared Price vs Area relationship*
  - *Analyzed Price vs Distance (km)*
  - *Checked Price frequency for patterns*

- **4. Data Cleaning & Preprocessing**
  - *Removed duplicates & negative prices*
  - *Handled outliers using IQR*
  - *Train-test split (80-20)*
- **5. Models Used**
  - *Linear Regression (~90% accuracy)*
  - *Polynomial Regression (degree 3, ~94% accuracy)*
- **6. Evaluation**
  - *Metric: R^2 score*
  - *Sample predictions for example properties*

- **7. Model Deployment / Saving**
  - *Model saved using pickle*
  - *EDA/plots excluded from final prediction workflow*
- **8. Conclusion**
  - *ML workflow: Preprocessing → Training → Evaluation → Deployment*
  - *Polynomial Regression improved accuracy over Linear Regression*

Summary :- *Performed data analysis and cleaning on a real estate dataset, including EDA with age, area, bedrooms, bathrooms, distance, and price distributions. Trained Linear Regression (~90% accuracy) and Polynomial Regression (~94% accuracy) models to predict property prices. Saved the final model using pickle for reuse.*