

# Predicting House Prices Using Machine Learning

Predicting house prices using machine learning is a common and valuable real-time project. Here's a high-level outline of how you can approach such a project.

## ➤ Data Connection

Gather a dataset that includes features like square footage, number of bedrooms, bathrooms, location, and historical sale prices.

## ➤ Data Preprocessing

- Handle missing data and outliers.
- Encode categorical variables (e.g., location) into numerical format.
- Split the dataset into a training set and a test set for model evaluation.

## ➤ Feature Selection/Engineering

- Select relevant features that have a significant impact on house prices.
- Create new features if needed, like price per square foot or age of the property.

## ➤ Model Selection

- Choose a regression model suitable for the task. Linear regression, decision trees, random forests, or gradient boosting are common choices.

- Model Training
  - Train the selected model using the training dataset.
- Model Evaluation
  - Evaluate the model's performance using appropriate metrics like Mean Absolute Error (MAE), Mean Squared Error (MSE), or Root Mean Squared Error (RMSE).
- Hyperparameter Tuning
  - Optimize model hyperparameters to improve performance.
- Deployment
  - Deploy the trained model in a real-time environment, which can be a web application or API.
- Testing and Monitoring
  - Continuously test the model's performance in a real-time setting and monitor for drift or degradation.
- User Interface
  - Develop a user-friendly interface for users to input property features and receive price predictions.
- Feedback Loop
  - Collect user feedback and data to further improve th

Flow Chart:

