PRODIGY_ML_01

Welcome to the PRODIGY_ML_01 project! This project is focused on implementing a linear regression model to predict house prices based on their square footage, number of bedrooms, and number of bathrooms.

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Introduction

PRODIGY_ML_01 is a machine learning project aimed at predicting house prices using a linear regression model. The model takes into account the square footage, number of bedrooms, and number of bathrooms of a house to make its predictions.

Features

- Data Pre-processing: Handling missing values and feature selection.

- Model Training: Training a linear regression model.

- Model Evaluation: Evaluating the model using Mean Squared Error (MSE) and R-squared metrics.

- Visualization: Visualizing the actual vs. predicted house prices.

Installation

To get started with this project, follow these steps:

1. Clone the repository:

   bash

   git clone https://github.com/astromanu007/PRODIGY_ML_01.git

   cd PRODIGY_ML_01

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2. Create a virtual environment (optional but recommended):

   bash

   python -m venv venv

   source venv/bin/activate # On Windows, use `venv\Scripts\activate`

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3. Install the required packages:

   `*bash*

   pip install -r requirements.txt

Usage

1. Prepare your dataset:

   - Ensure your dataset (`house_data.csv`) is in the project directory with columns: `SquareFootage`, `Bedrooms`, `Bathrooms`, and `Price`.

2. Run the project:

   ```bash

   python main.py

   ```

3. The script will output the Mean Squared Error, R-squared value, and display a plot of actual vs. predicted prices.

Project Structure

STORE THE FILES ACCORDING TO THE MAP.

PRODIGY_ML_01/

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├── data/

| └── house_data.csv # Example dataset

├── src/

| ├── preprocess.py # Data pre-processing functions

| ├── train.py # Model training functions

| ├── evaluate.py # Model evaluation functions

| └── visualize.py # Visualization functions

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├── main.py # Main script to run the project

├── requirements.txt # Required Python packages

└── README.md # Project documentation

Contributing

Contributions are welcome! If you have any ideas, improvements, or bug fixes, feel free to submit a pull request. Please make sure to follow the project's code of conduct.

License

This project is licensed under the MIT License.

Contact

If you have any questions or suggestions, feel free to contact me:

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