Module 4: Build MLApps using New Age Tool

Demo 5 – Documentation: Simple ML Model with Flask

Documentation: Simple ML Model with Flask

Solution:

This documentation outlines the steps to create and deploy a simple machine learning model using Flask. The model will predict house prices based on the area of the house in square feet.

Environment Setup

Before beginning, ensure Python is installed on your system. You will also need to install Flask and scikit-learn libraries, which can be installed via pip.

Model Training

The model used in this application is a linear regression model trained on a small dataset representing house sizes and their corresponding prices. The training process involves fitting the linear regression model to the data points. After training, the model is serialized and saved to a file for later use by the Flask application.

Flask Application Development

The Flask application serves as the interface to interact with the trained model. It can load the model from the saved file and using it to make predictions. The application features a simple HTML form where users can input the area of a house, and upon submission, it displays the predicted price.

The application handles requests through a specific route, which processes the user input, uses the model to compute the predicted price, and then renders the result on the same page. The use of render_template_string allows for inline HTML, making it easy to include dynamic content based on the model's output.

Running the Application

The Flask application can be started from the command line, which makes it accessible via a web browser. Once running, users can interact with it by entering the house area and receiving price predictions.

User Interaction

Users interact with the application through a web interface accessible via their browser. The interface includes a form where the house area can be entered. After submission, the predicted price is displayed on the same page, providing immediate feedback.

Conclusion

This simple Flask application demonstrates the integration of a machine learning model into a web application, allowing for real-time interactions and predictions. It serves as a basic example of how machine learning can be applied in web environments for predictive analytics.