What is pandas in Python for?

pandas is a Python package providing fast, flexible, and expressive data structures designed to make working with “relational” or “labeled” data both easy and intuitive. It aims to be the **fundamental high-level building block for doing practical, real-world data analysis in Python**.

NumPy is **a library for Python** that adds support for large, multi-dimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays.

Scikit-learn (Sklearn) is the most useful and robust library for machine learning in Python. It provides a selection of efficient tools for machine learning and statistical modeling including classification, regression, clustering and dimensionality reduction via a consistence interface in Python. This library, which is largely written in Python, is built upon NumPy, SciPy and Matplotlib.

What is pickle in Python used for?

Pickle in Python is primarily used in **serializing and deserializing a Python object structure**. In other words, it's the process of converting a Python object into a byte stream to store it in a file/database, maintain program state across sessions, or transport data over the network.

Html css (front end)

IPL- slider Property of Html in CSS

A slider is **a set of frames in a sequence that can be traversed respectively**. This article exhibits the approach to build a slideshow with the use of only HTML and CSS

>>cyam

>>ml model train >(csv)

A CSV (**comma-separated values**) file is a text file that has a specific format which allows data to be saved in a table structured format

Data frame-

DataFrame. DataFrame is **a 2-dimensional labeled data structure with columns of potentially different types**.

What is regression

Regression is **a modeling task that involves predicting a numerical value given an input**. Algorithms used for regression tasks are also referred to as “regression” algorithms, with the most widely known and perhaps most successful being linear regression.

Linear regression used

Simple linear regression is an approach for predicting a **response** using a **single feature**.  
It is assumed that the two variables are linearly related. Hence, we try to find a linear function that predicts the response value(y) as accurately as possible as a function of the feature or independent variable(x).

Lasso and ridge(could also be used very difficult)

1. **Ridge Regression:**
   * Performs L2 regularization, i.e. adds penalty equivalent to **square of the magnitude** of coefficients
   * Minimization objective = LS Obj + α \* (sum of square of coefficients)
2. **Lasso Regression:**
   * Performs L1 regularization, i.e. adds penalty equivalent to **absolute value of the magnitude** of coefficients
   * Minimization objective = LS Obj + α \* (sum of absolute value of coefficients)

Logistic regression could also be used but it gives binary output.

It is used in statistical software **to understand the relationship between the dependent variable and one or more independent variables by estimating probabilities using** a logistic regression equation. This type of analysis can help you predict the likelihood of an event happening or a choice being made

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App.py

\_\_Purpose of apps.py file:

This file is **created to help the user include any application configuration for the app**. Using this, you can configure some of the attributes of the application. From Application Configuration documentation: Application configuration objects store metadata for an application.

Flask se important

**Advantages of Flask-based systems**

* higher flexibility.
* higher compatibility with latest technologies.
* high scalability for simple web applications.
* technical experimentation.
* customization.
* slightly higher framework performance.
* easier to use for simple cases.
* smaller size of the code base.

Stream lid uses only one file for the different parts of the program and makes it confusing.

Perhaps the biggest downside of Streamlit are **its speed issues**. The entire Python script is re-run in the browser every time you make a change to the application code, or anytime a user interacts with your application.