

1. Assignment operator used in Python is: -

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2. The method `df_cars.describe()` will give description of which of the following column?

Car name

Brand

Price (in lakhs)

All of the above

1. Explain the difference between NumPy arrays and Python lists in terms of:

Storage efficiency

Speed of computation

Supported operations

Answer:

Storage efficiency: NumPy arrays store elements of the same type in continuous memory locations, which makes them more memory-efficient. Python lists can hold mixed data types, so they consume more memory.

Speed of computation: NumPy operations are internally implemented in optimized C, making numerical computations faster. Lists rely on Python loops, which are slower.

Supported operations: NumPy arrays support direct element-wise mathematical operations, while lists require iteration to achieve the same.

2. What is data visualization in Python? Explain how it helps in data science and the role of Pandas and Matplotlib in visualization.

Answer:

Data Visualization means representing data graphically to make patterns, relationships, and trends easier to understand.

In data science, visualization helps in quickly identifying outliers, comparing categories, and summarizing large datasets.

Pandas provides tools to load and organize data into DataFrames, making it easier to manipulate before visualization.

Matplotlib is a plotting library that creates charts like line plots, bar charts, scatter plots, and histograms.

Together, Pandas and Matplotlib help transform raw data into meaningful graphical insights, making analysis more intuitive.