Ayush Indapure
22 March 2025

2.1P

Section - 2

Python is a widely used programming language that is easy to learn, and widely used for various applications including web development, data science, AI - Automation and more.

Python Libraries are a collection of pre-built and pre-compiled codes which are used later-on in a program for some specific well-defined operations. Libraries make things simple as it make sure we don't have to explicitly write every single thing from scratch. Python libraries play a very crucial role in fields of Machine learning, **Data analysis** and AI. Example of python libraries include - TensorFlow, Pandas, MatPlotLib, NumPy, PyTorch, etc. Without libraries developers would have to spend a lot of time to write the functions manually which is very time-consuming.

1. Checking for NaN values in a DataFrame

Example :

```
df = pd.DataFrame(data)
# Check for missing values
missing_values = df.isnull().sum()
```

2. Slicing data using .iloc[]

Example:

```
subset = df.iloc[:2,:2]
print("subset displaying as : ",subset);
```

```
import matplotlib.pyplot as plt
fruits = ['apple','banana','cherry']
price = [5,8,3] #price in $

#bar chart
plt.bar(fruits,price)
plt.title("Prices of fruits")
plt.xlabel("Fruits")
plt.ylabel("Price in $")

plt.show()
```

Evidence :