**LAB – 3: PANDAS FILLING OUT MISSING VALUES**

**PANDAS:**

Pandas is a Python software library for data analysis and manipulation widely used in data science and machine learning applications enabling cleansing, merging, and reshaping of data structures for big datasets, handling various file formats including Excel, JSON, Parquet, SQL database tables or queries, and CSV files.

**Installation: pip install pandas**

**Here are Pandas methods used for filling out missing values:**

1. **isnull():** Checks for missing values in a DataFrame or Series.

Syntax: df.isnull()

1. **dropna():** Removes rows with missing values from a DataFrame.

Syntax: df.dropna()

1. **fillna():** Fills missing values in a DataFrame or Series with a specified value.

Syntax: df.fillna(value)

1. **fillna() “pad” method:** Fills missing values with the previous non-null value along the specified axis.

Syntax: df.fillna(method='pad')

1. **fillna() “bfill” method:** Fills missing values with the next non-null value along the specified axis.

Syntax: df.fillna(method='bfill')

1. **sum():** Computes the sum of values along a specified axis

Syntax: df.sum()

1. **replace():** Replaces values with other values in a DataFrame or Series.

Syntax: df.replace(to\_replace, value)

1. **fillna() “mean”:** Fills missing values with the mean of the non-null values in a DataFrame or Series.

Syntax: df.fillna(df.mean())

1. **fillna() “median”:** Fills missing values with the median of the non-null values in a DataFrame or Series.

Syntax: df.fillna(df.median())

1. **fillna() “mode”:** Fills missing values with the mode (most frequent value) in a DataFrame or Series.

Syntax: df.fillna(df.mode())

1. **corr():** Computes the correlation matrix of a DataFrame.

Syntax: df.corr()