Pandas Functionlist

Here's an updated and comprehensive table of Pandas functions and methods:

Category	Function/Method	Description
DataFrame Creation	`pd.DataFrame`	Create a DataFrame from various data sources.
Data Inspection	`df.head()`	View the top rows of a DataFrame.
	`df.tail()`	View the bottom rows of a DataFrame.
	`df.info()`	Get DataFrame info (data types, missing values).
	`df.describe()`	Get summary statistics.
	`df.shape`	Check the shape (rows, columns).
	`df.unique()`	Get unique values for a column.
	`df.nunique()`	Count unique values for each column.
	`df.value_counts()`	Count occurrences of unique values.
Selection and Filtering	`df['column_name']`	Select a column.
	`df[['col1', 'col2']]`	Select multiple columns.
	`df[df['col'] > value]`	Filter rows based on conditions.
	`df.iloc[index]`	Select rows/columns by index.
	`df.loc[condition]`	Select rows/columns by label/condition.
	`df.query()`	Query the DataFrame with a boolean expression.
Sorting	`df.sort_values(by='col')`	Sort values by column(s).
Aggregation and Grouping	`df.groupby('col')`	Group by column and perform aggregate operations.
	`df.agg()`	Aggregate using one or more operations.

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	`df.corr()`	Compute pairwise correlation.
	`df.cov()`	Compute pairwise covariance.
	`df.transform()`	Apply a function to each group and return a DataFrame of the same shape.
	`df.pivot_table()`	Create pivot tables.
Merging and Joining	`pd.merge()`	Merge DataFrames on a key.
	`pd.concat()`	Concatenate DataFrames (rows/columns).
	`df.join()`	Join columns of another DataFrame.
Missing Data Handling	`df.isnull()`	Check for missing values.
	`df.notnull()`	Check for non-missing values.
	`df.fillna()`	Fill missing values.
	`df.dropna()`	Drop missing values.
	`df.replace()`	Replace values.
Data Transformation	`df.apply()`	Apply functions to DataFrame columns.
	`df.applymap()`	Apply a function to the entire DataFrame.
	`df['col'].apply()`	Apply function to a column.
	`df['col'].map()`	Map values to a function.
	`df['col'].transform()`	Apply a function and return a DataFrame of the same shape.
	`df['col'].astype()`	Convert a column to a specific data type.
String Operations	`df['col'].str.contains()`	Check if string contains a substring.
	`df['col'].str.replace()`	Replace occurrences of a pattern.
	`df['col'].str.split()`	Split each string.
	`df['col'].str.lower()`	Convert strings to lowercase.
	`df['col'].str.upper()`	Convert strings to uppercase.

Category	Function/Method	Description
	`df['col'].str.strip()`	Strip leading and trailing whitespace.
Pivot Tables	`df.pivot_table()`	Create pivot tables.
	`df.pivot()`	Pivot a DataFrame.
Reshaping Data	`df.stack()`	Stack DataFrame columns.
	`df.unstack()`	Unstack DataFrame index.
	`pd.melt()`	Melt DataFrame from wide to long format.
	`df.explode()`	Transform list-like elements to rows.
	`df.set_index()`	Set a column as the index.
	`df.reset_index()`	Reset the index of a DataFrame.
Time Series Analysis	`pd.to_datetime()`	Convert strings to datetime.
	`df.resample()`	Resample time-series data.
	`df.shift()`	Shift the data by periods.
	`df.asfreq()`	Convert to a specified frequency.
	`df.rolling()`	Rolling window calculations.
	`df.expanding()`	Expanding window calculations.
	`df.ewm()`	Exponential weighted functions.
Exporting and Importing	`df.to_csv()`	Write DataFrame to a CSV file.
	`pd.read_csv()`	Read CSV file into a DataFrame.
	`df.to_excel()`	Write DataFrame to an Excel file.
	`pd.read_excel()`	Read Excel file into a DataFrame.
	`df.to_hdf()`	Write DataFrame to a HDF5 file.
	`df.to_pickle()`	Write DataFrame to a pickle file.
	`pd.read_pickle()`	Load DataFrame from a pickle file.
Visualization	`df.plot()`	Plot data using Matplotlib.
	`df.plot(kind='hist')`	Plot a histogram.
	`df.plot(kind='box')`	Plot a box plot.
	`df.plot(kind='scatter')`	Plot a scatter plot.

Category	Function/Method	Description
	`df.plot(kind='line')`	Plot a line plot.
Advanced Filtering	`df.query()`	Query the DataFrame with a boolean expression.
	`df[(condition1) & (condition2)]`	Filter rows based on multiple conditions.
Removing Duplicates	`df.drop_duplicates()`	Remove duplicate rows.
Handling Categorical Data	`df.get_dummies()`	Convert categorical variable into dummy variables.
	`df['col'].astype('category')`	Convert a column to categorical data type.
Mathematical Operations	`df['col1'] + df['col2']`	Perform element-wise operations.
	`df['col1'].sum()`	Sum of values in a column.
	`df['col1'].mean()`	Mean of values in a column.
	`df['col1'].median()`	Median of values in a column.
	`df['col1'].std()`	Standard deviation of values in a column.
Indexing and Slicing	`df.set_index()`	Set a column as the index.
	`df.reset_index()`	Reset the index of a DataFrame.
Rolling Window Calculations	`df.rolling()`	Rolling window calculations.
	`df.expanding()`	Expanding window calculations.
	`df.ewm()`	Exponential weighted functions.
File Operations	`df.to_json()`	Write DataFrame to a JSON file.
	`pd.read_json()`	Read JSON file into a DataFrame.

This table provides a comprehensive overview of many useful Pandas functions and methods for data manipulation and analysis.