# PANDAS

1. **Creating DataFrames:**
    - **pd.DataFrame()**: Create an empty DataFrame.
    - **pd.read_csv()**: Read data from a CSV file into a DataFrame.
    - **pd.read_excel()**: Read data from an Excel file into a DataFrame.
    - **pd.read_sql()**: Read data from a SQL database into a DataFrame.
2. **Data Exploration:**
    - **df.head()**: Display the first few rows of a DataFrame.
    - **df.tail()**: Display the last few rows of a DataFrame.
    - **df.sample()**: Randomly sample rows from a DataFrame.
    - **df.info()**: Display a concise summary of a DataFrame.
    - **df.describe()**: Generate descriptive statistics of a DataFrame.
    - **df.shape**: Get the number of rows and columns in a DataFrame.
    - **df.columns**: Get the column names of a DataFrame.
3. **Data Manipulation:**
    - **df.drop()**: Drop specified labels from rows or columns.
    - **df.fillna()**: Fill missing values in a DataFrame.
    - **df.replace()**: Replace specified values in a DataFrame.
    - **df.rename()**: Rename columns in a DataFrame.
    - **df.sort_values()**: Sort a DataFrame by specified columns.
    - **df.groupby()**: Group data in a DataFrame based on specified criteria.
    - **df.pivot_table()**: Create a pivot table in a DataFrame.
4. **Merging and Concatenating:**
    - **pd.concat()**: Concatenate DataFrames along a particular axis.
    - **pd.merge()**: Merge two DataFrames based on specified keys.
5. **Indexing and Selection:**
    - **df[]** or **df.loc[]** or **df.iloc[]**: Select columns or rows from a DataFrame.
    - **df.at[]** or **df.iat[]**: Access a single value in a DataFrame.
6. **Aggregation and Statistics:**
    - **df.mean()**, **df.median()**, **df.sum()**: Calculate mean, median, and sum.
    - **df.min()**, **df.max()**: Find minimum and maximum values.
    - **df.std()**, **df.var()**: Calculate standard deviation and variance.
7. **Handling Time Series Data:**
    - **pd.to_datetime()**: Convert a column to datetime format.
    - **df.resample()**: Resample time series data.
8. **Miscellaneous:**
    - **df.apply()**: Apply a function along the axis of a DataFrame.
    - **df.isnull()**, **df.notnull()**: Check for missing or non-missing values.