Basic examples demonstrating common operations using pandas:

### 1. Creating a DataFrame:

```python

import pandas as pd

# Creating a DataFrame from a dictionary

data = {'Name': ['Alice', 'Bob', 'Charlie', 'David'],

'Age': [25, 30, 35, 40],

'City': ['New York', 'Los Angeles', 'Chicago', 'Houston']}

df = pd.DataFrame(data)

print(df)

```

### 2. Loading Data from CSV:

```python

# Loading data from a CSV file

df = pd.read\_csv('data.csv')

print(df.head())

```

### 3. Accessing Data:

```python

# Accessing a single column

print(df['Name'])

# Accessing multiple columns

print(df[['Name', 'Age']])

# Accessing rows by index

print(df.iloc[0]) # First row

print(df.iloc[1:3]) # Rows 2 to 3

# Accessing specific rows and columns

print(df.loc[1, 'Name']) # Name of the second row

```

### 4. Data Manipulation:

```python

# Adding a new column

df['Gender'] = ['Female', 'Male', 'Male', 'Male']

# Filtering rows based on a condition

print(df[df['Age'] > 30])

# Sorting the DataFrame

df.sort\_values(by='Age', ascending=False, inplace=True)

# Dropping rows or columns

df.drop(columns=['City'], inplace=True)

```

### 5. Data Cleaning:

```python

# Handling missing values

df.dropna() # Drop rows with missing values

df.fillna(value) # Fill missing values with a specified value

# Removing duplicates

df.drop\_duplicates()

# Changing data types

df['Age'] = df['Age'].astype(float)

```

### 6. Data Visualization:

```python

import matplotlib.pyplot as plt

# Plotting

df['Age'].plot(kind='hist')

plt.xlabel('Age')

plt.ylabel('Frequency')

plt.title('Age Distribution')

plt.show()

```

These examples cover basic operations in pandas. You can build upon these concepts to perform more complex data analysis and manipulation tasks.