pandas

Renaming and Combining

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PD

Renaming

In pandas, rename columns using df.rename(columns={'old_name': 'new_name'}) or directly with df.columns = ['new_name1', 'new_name2'].

```python
import pandas as pd

# Create a simple DataFrame
df = pd.DataFrame({
    'A': [1, 2, 3],
    'B': [4, 5, 6]
})

# Rename columns using the rename method
df.rename(columns={'A': 'Column1', 'B': 'Column2'}, inplace=True)

print(df)
```

```
PS D:\Documents\GitHub\Pandas\vid6> python ex1.py
   Column1  Column2
0        1        4
1        2        5
2        3        6
PS D:\Documents\GitHub\Pandas\vid6>
```

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```python
# Create a simple DataFrame with custom index
df = pd.DataFrame({
    'A': [1, 2, 3],
    'B': [4, 5, 6]
}, index=['x', 'y', 'z'])

# Rename columns and index
df.rename(columns={'A': 'Column1', 'B': 'Column2'}, index={'x': 'row1', 'y': 'row2', 'z': 'row3'}, inplace=True)

print(df)
```

```
PS D:\Documents\GitHub\Pandas\vid6> python ex2.py
      Column1  Column2
row1        1        4
row2        2        5
row3        3        6
PS D:\Documents\GitHub\Pandas\vid6>
```

Combining

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In pandas, combine DataFrames using pd.concat([df1, df2]) to stack them or df1.merge(df2, on='key') to join based on a common column, like SQL joins.

```python
import pandas as pd

# Create two DataFrames
df1 = pd.DataFrame({'A': [1, 2], 'B': [3, 4]})
df2 = pd.DataFrame({'A': [5, 6], 'B': [7, 8]})

# Stack the DataFrames vertically
combined_df = pd.concat([df1, df2])

print(combined_df)
```

```
PS D:\Documents\GitHub\Pandas\vid6> python
   A  B
0  1  3
1  2  4
0  5  7
1  6  8
PS D:\Documents\GitHub\Pandas\vid6>
```

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```python
import pandas as pd

# Create two DataFrames with a common key
df1 = pd.DataFrame({'key': [1, 2], 'value1': ['A', 'B']})
df2 = pd.DataFrame({'key': [1, 2], 'value2': ['C', 'D']})

# Merge the DataFrames based on the 'key' column
merged_df = df1.merge(df2, on='key')

print(merged_df)
```

```
PS D:\Documents\GitHub\Pandas\vid6> python ex4.py
   key value1 value2
0    1      A      C
1    2      B      D
PS D:\Documents\GitHub\Pandas\vid6>
```

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Thank you

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