DataFrame_Apply

July 19, 2024

1 DataFrame Apply

1. Run the cell below to setup this lab.

```python
[1]: import pandas as pd
     data = { 'even': range(20,0,-2),
              'odd':  range(1,21,2)
            }
     df = pd.DataFrame(data)
     df
```

```
[1]:    even  odd
     0    20    1
     1    18    3
     2    16    5
     3    14    7
     4    12    9
     5    10   11
     6     8   13
     7     6   15
     8     4   17
     9     2   19
```

2. The Python Standard Library includes a built-in funciton `max()`, which returns the maximun value of an iterable input. Use the DataFrame `.apply()` method to get the maximum value of each column.

```python
[7]: df.apply(max)
```

```
[7]: even    20
     odd     19
     dtype: int64
```

3. Now use the `axis=1` argument with apply to get the maximum value of each row.

```python
[8]: df.apply(max, axis=1)
```

```
[8]: 0    20
     1    18
     2    16
     3    14
     4    12
     5    11
     6    13
     7    15
     8    17
     9    19
     dtype: int64
```

4. Complete the function below so that it will return **True** if the odd value is greater than the even one.

```
[10]: def odd_bigger(row):
          if row['odd'] > row['even']:
              return True
          return False
```

5. Apply this function to **df** with the axis argument set to 1 to run it on each row.

```
[12]: df.apply(odd_bigger, axis=1)
```

```
[12]: 0    False
     1    False
     2    False
     3    False
     4    False
     5     True
     6     True
     7     True
     8     True
     9     True
     dtype: bool
```

6. Now use the output values to create a new column, 'Odd Bigger' and view **df** to confirm that the values are correct.

```
[13]: df['Odd Bigger'] = df.apply(odd_bigger, axis=1)
      df
```

```
[13]:    even  odd  Odd Bigger
     0    20    1       False
     1    18    3       False
     2    16    5       False
     3    14    7       False
     4    12    9       False
```

```
5    10   11        True
6     8   13        True
7     6   15        True
8     4   17        True
9     2   19        True
```

[ ]: