05-Pandas-Time-Series-Exercises-SET-ONE

October 19, 2022

1 Pandas Time Series Exercise Set #1

For this set of exercises we'll use a dataset containing monthly milk production values in pounds per cow from January 1962 to December 1975.

IMPORTANT NOTE! Make sure you don't run the cells directly above the example output shown, otherwise you will end up writing over the example output!

```python
[16]: # RUN THIS CELL
import pandas as pd
%matplotlib inline

df = pd.read_csv('../Data/monthly_milk_production.csv', encoding='utf8')
title = "Monthly milk production: pounds per cow. Jan '62 - Dec '75"

print(len(df))
print(df.head())
```

```
168
      Date  Production
0  1962-01         589
1  1962-02         561
2  1962-03         640
3  1962-04         656
4  1962-05         727
```

So df has 168 records and 2 columns.

1.0.1 1. What is the current data type of the Date column?

HINT: We show how to list column dtypes in the first set of DataFrame lectures.

```
[ ]: # CODE HERE
```

```
[17]: # DON'T WRITE HERE
```

```
[17]: Date         object
      Production    int64
      dtype: object
```

1.0.2 2. Change the Date column to a datetime format

```
[ ]:
```

```
[18]: # DON'T WRITE HERE
```

```
[18]: Date          datetime64[ns]
      Production           int64
      dtype: object
```

1.0.3 3. Set the Date column to be the new index

```
[ ]:
```
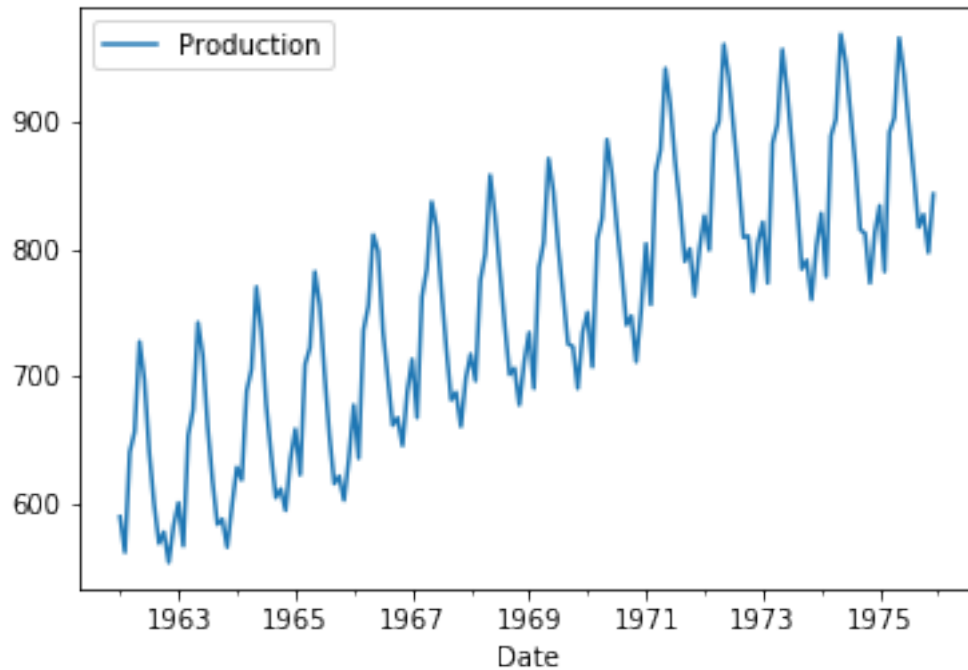
```
[19]: # DON'T WRITE HERE
```

```
[19]:              Production
      Date
      1962-01-01         589
      1962-02-01         561
      1962-03-01         640
      1962-04-01         656
      1962-05-01         727
```

1.0.4 4. Plot the DataFrame with a simple line plot. What do you notice about the plot?

```
[ ]:
```

```
[20]: # DON'T WRITE HERE
```

1.0.5 5. Add a column called 'Month' that takes the month value from the index

HINT: You have to call df.index as df['Date'] won't work.

BONUS: See if you can obtain the name of the month instead of a number!

```
[ ]:
```

```
[28]: # DON'T WRITE HERE
```

```
[28]:            Production  Month
      Date
      1962-01-01         589      1
      1962-02-01         561      2
      1962-03-01         640      3
      1962-04-01         656      4
      1962-05-01         727      5
```
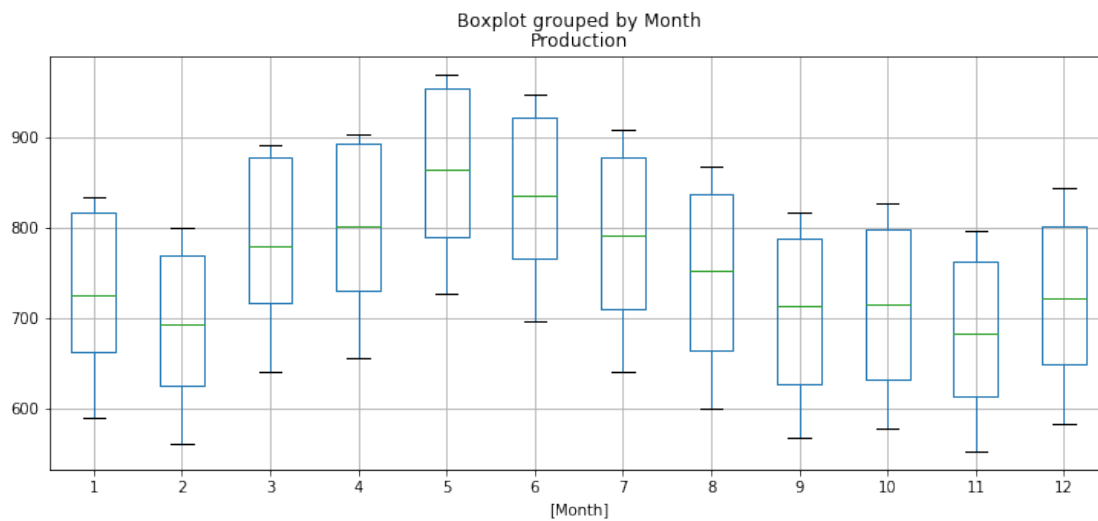
```
[22]: # BONUS SOLUTION:
```

```
[22]:            Production     Month
      Date
      1962-01-01         589   January
      1962-02-01         561  February
```

```
1962-03-01          640      March
1962-04-01          656      April
1962-05-01          727        May
```

1.0.6 6. Create a BoxPlot that groups by the Month field

```
[ ]:
```

```
[29]: # DON'T WRITE HERE
```


2 Great Job!