plotting_in_parallel

August 23, 2019

1 Plotting with Plotly

Put your Parallel Coordinates plotting knowledge to use by using the plot to visaulize and analyze the relationship between sales, foreclosures, and year for Allgehany County in Pennsylvania.

[1]:
```
import plotly.express as px
import pandas as pd
from pathlib import Path
```

1.0.1 Prep Data for Calculating Total Number of Sales and Foreclosures

[2]:
```
# Read in data
sales = pd.read_csv(
    Path("../../Resources/alleghany_sales.csv"),
    infer_datetime_format=True,
    parse_dates=True,
    index_col="SALEDATE",
).dropna()

foreclosures = pd.read_csv(
    Path("../../Resources/alleghany_foreclosures.csv"),
    infer_datetime_format=True,
    parse_dates=True,
    index_col="filing_date",
).dropna()

# Slice data and get the count of instances by year
foreclosures_grp_cnt = (
    foreclosures[["amount"]].groupby([foreclosures.index.year]).count()
)
sales_grp_cnt = sales[["PRICE"]].groupby([sales.index.year]).count()

# Rename columns to be 'num_sales' and 'num_foreclosures'
sales_grp_cnt.columns = ["num_sales"]
foreclosures_grp_cnt.columns = ["num_foreclosures"]
```

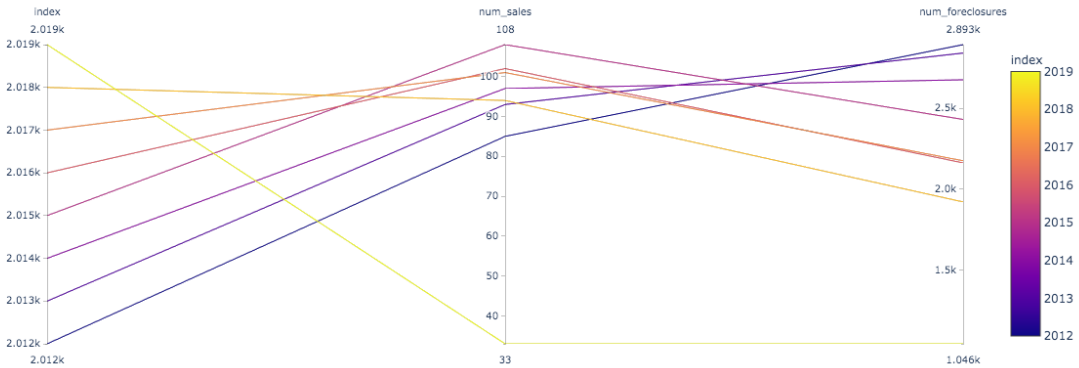
[3]:
```
# Concatenate data
sales_foreclosures_cnt = (
    pd.concat([sales_grp_cnt, foreclosures_grp_cnt], axis=1).dropna().
 ↪reset_index()
)
sales_foreclosures_cnt.head()
```

[3]:

	index	num_sales	num_foreclosures
0	2012	85.0	2893
1	2013	93.0	2841
2	2014	97.0	2676
3	2015	108.0	2431
4	2016	102.0	2163

1.0.2 Plot data

[4]:
```
# Plot data using parallel_coordinates plot
px.parallel_coordinates(sales_foreclosures_cnt, color='index')
```



1.0.3 Prep Data for Calculating Total Number of Sales and Foreclosures

[5]:
```
# Group data and calculate total amount in foreclosures and sales by year
sales_grp_sum = sales[["PRICE"]].groupby([sales.index.year]).sum()
foreclosures_grp_sum = (
    foreclosures[["municipality", "amount"]].groupby([foreclosures.index.year]).
 ↪sum()
)

# Rename columns to 'amount_from_sales' and 'amount_from_foreclosures'
sales_grp_sum.columns = ["amount_from_sales"]
foreclosures_grp_sum.columns = ["amount_from_foreclosures"]
```

[6]:
```
# Concatenate sums
sales_foreclosures_sum = (
    pd.concat([sales_grp_sum, foreclosures_grp_sum], axis=1).dropna().
 ↪reset_index()
)
```

1.0.4 Plot data

[7]:
```
# Plot data using parallel_coordinates plot
px.parallel_coordinates(sales_foreclosures_sum, color='index')
```