judges_panel.ipynb

Markdown

Python [conda env:pyvizenv25] *

The Judge's Panel

REMAX is requesting that you complete one more technical evaluation, which will focus on creating an interactive dashboard. The hiring team at REMAX will be judging you for your ability to create a dashboard that enables user interaction. Use your knowledge of Panel panels and PyViz technologies to create a dashboard that has multiple tabs.

[1]:
```python
# initial imports
import pandas as pd
import numpy as np
from pathlib import Path
import panel as pn
from panel.interact import interact
import plotly.express as px
pn.extension("plotly")
```

Prep data and create plots

[2]:
```python
# Prep Data
housing_type = ["Single Family", "Multi-Family", "Apartment"]
region = ["North East", "Tri-State"]
prop_size = ["Large", "Medium", "Small"]

df = pd.DataFrame(
    {
        "sold": np.random.randint(999, 1002, 50),
        "year": np.random.randint(2010, 2019, 50),
        "type": np.random.choice(housing_type, 50),
        "region": np.random.choice(region, 50),
        "prop_size": np.random.choice(prop_size, 50),
    }
).sort_values(["year", "type", "region", "prop_size"])

# Plot data using parallel_categories
parallel_categories = px.parallel_categories(
    df,
    dimensions=["type", "region", "prop_size"],
    color="year",
    color_continuous_scale=px.colors.sequential.Inferno,
    labels={
        "type": "Type of Dwelling",
        "region": "Region",
        "prop_size": "Property Size",
    },
)

# Read in data
sales = pd.read_csv(
    Path("../Resources/allegheny_sales.csv"),
    infer_datetime_format=True,
    parse_dates=True,
    index_col="SALEDATE",
).dropna()

foreclosures = pd.read_csv(
    Path("../Resources/allegheny_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()

# Concatenate data
sales_foreclosures_cnt = (
    pd.concat([sales_grp_cnt, foreclosures_grp_cnt], axis=1).dropna().reset_index()
)

# Rename columns to be 'num_sales' and 'num_foreclosures'
sales_foreclosures_cnt.columns = ["year", "num_sales", "num_foreclosures"]

# Plot data using parallel_coordinates plot
parallel_coordinates = px.parallel_coordinates(sales_foreclosures_cnt, color="year")

# Create bar plots
num_foreclosures_plot = px.bar(
    sales_foreclosures_cnt,
    x="year",
    y="num_foreclosures",
    title="Number of Foreclosures",
)
num_sales_plot = px.bar(
    sales_foreclosures_cnt, x="year", y="num_sales", title="Number of Sales"
)
```

Create row using parallel categories and parallel coordinates plots

[3]:
```python
# Put parallel plots in a single row
row_of_parallel = pn.Row(parallel_categories, parallel_coordinates)
```

Create a row with just num_foreclosures_plot. Then, use the append function to add num_sales_plot

[4]:
```python
# Put bar plots in row
row_of_bar = pn.Row(num_foreclosures_plot)
row_of_bar.append(num_sales_plot)
```

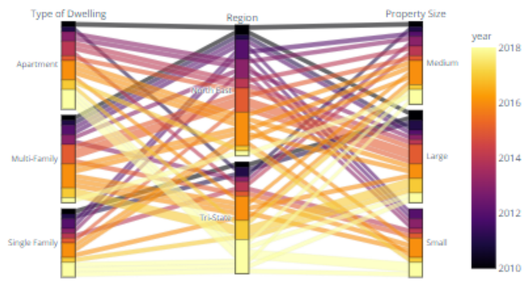
Create a tab that contains plots_as_column, row_of_bar, and row_of_parallel

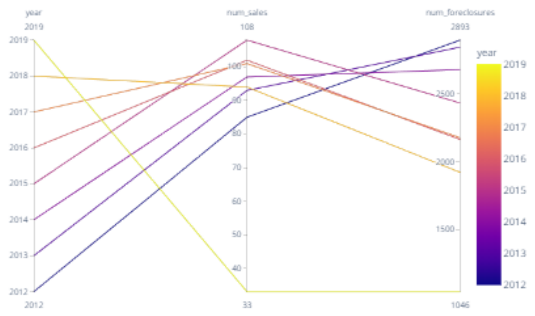
[6]:
```
# Create tabs
tabs = pn.Tabs(
    ("All Plots", plots_as_column),
    ("General Plots", row_of_bar),
    ("Statistical Plots", row_of_parallel)
)
tabs
```

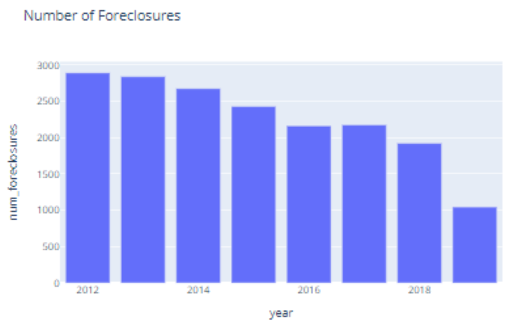
[6]:

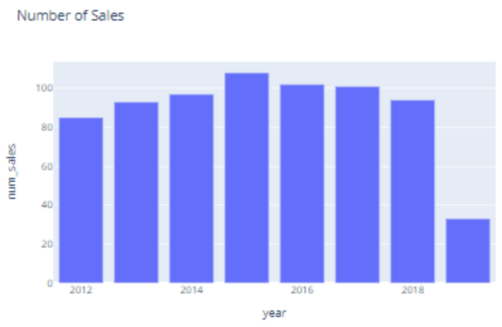
All Plots General Plots Statistical Plots

Allegheny Real Estate Dashboard









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