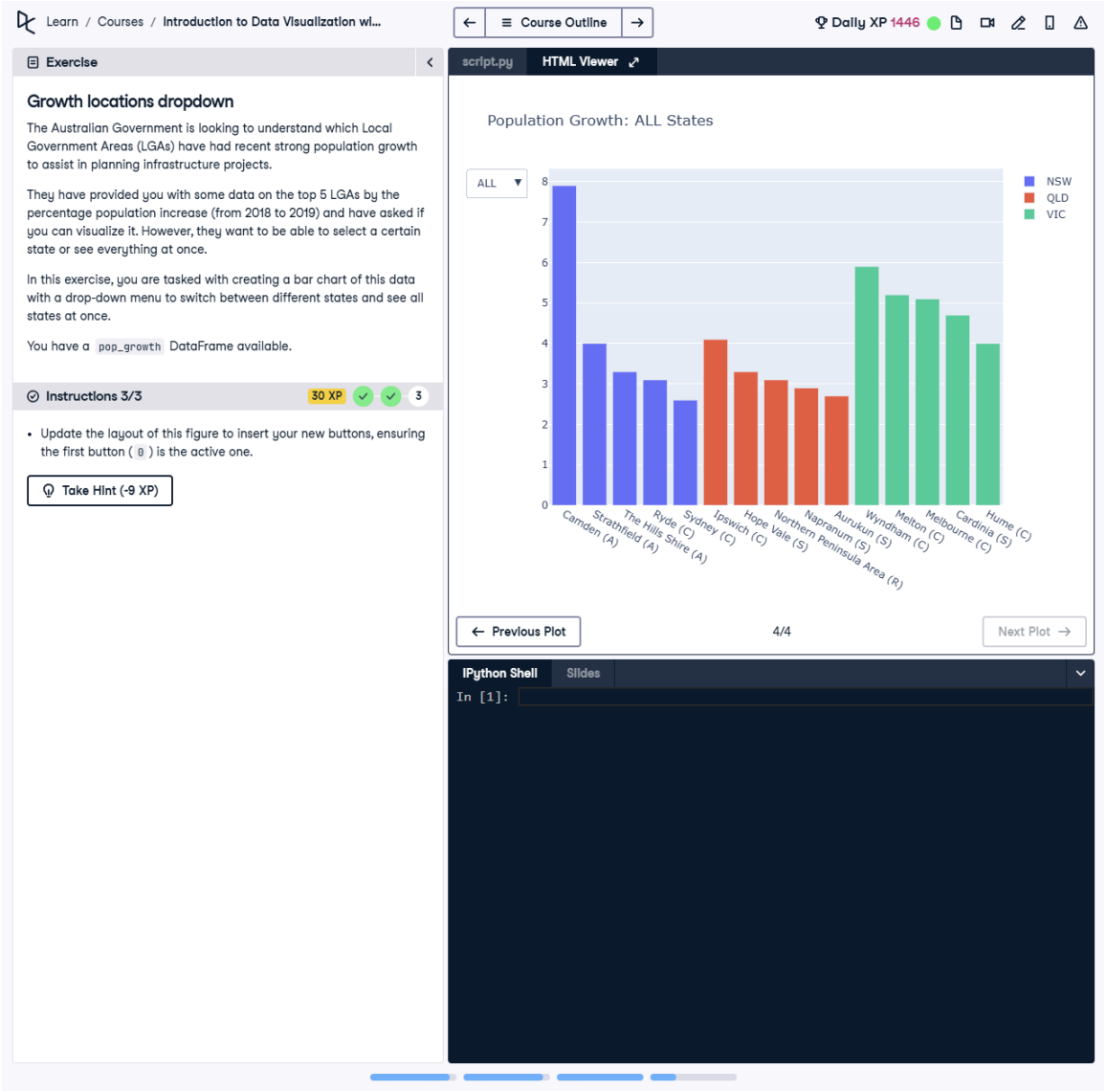
Growth Locations Dropdown - Final Solution



Final Question

The Australian Government is looking to understand which Local Government Areas (LGAs) have had recent strong population growth to assist in planning infrastructure projects.

They have provided you with some data on the top 5 LGAs by the percentage population increase (from 2018 to 2019) and have asked if you can visualize it. However, they want to be able to select a certain state or see everything at once.

In this exercise, you are tasked with updating the layout of this figure to insert your new buttons, ensuring the first button ('ALL') is the active one.

Final Question Explanation

This task involves refining the dropdown menu and layout for a bar chart visualizing population growth data. The first dropdown button ('ALL') should be the active one by default, and the layout must be updated accordingly.

Final Solution

```
import plotly.graph_objects as go
import pandas as pd

# Assume pop_growth DataFrame is already loaded with columns:
# 'State', 'Local Government Area', 'Change %'

# Create the basic figure
fig = go.Figure()

# Loop through the states
states = ['NSW', 'QLD', 'VIC']
for state in states:
    # Subset the DataFrame
    df = pop_growth[pop_growth.State == state]

    # Add a trace for each state subset
    fig.add_trace(go.Bar(
        x=df['Local Government Area'],
        y=df['Change %'],
        name=state
    ))

# Define dropdown buttons with explicit visibility
dropdown_buttons = [
    {
        'label': "ALL",
        'method': "update",
        'args': [{"visible": [True, True, True]}, {"title": "Population Growth: ALL
States"}]
    },
    {
        'label': "NSW",
        'method': "update",
        'args': [{"visible": [True, False, False]}, {"title": "Population Growth:
NSW"}]
```

```
    },
    {
        'label': "QLD",
        'method': "update",
        'args': [{"visible": [False, True, False]}, {"title": "Population Growth:
QLD"}]
    },
    {
        'label': "VIC",
        'method': "update",
        'args': [{"visible": [False, False, True]}, {"title": "Population Growth:
VIC"}]
    }
]

# Add the dropdown menu to the layout
fig.update_layout(
    updatemenus=[{
        'buttons': dropdown_buttons,
        'direction': 'down',
        'showactive': True,
        'active': 0
    }],
    title="Population Growth: ALL States"
)

# Show the plot
fig.show()
```

Final Solution Explanation

1. The `pop_growth` DataFrame is iterated over to filter data for each state ('NSW', 'QLD', 'VIC').
2. For each state, a bar chart trace is added to the figure, displaying the population growth percentage for its LGAs.
3. Dropdown buttons are created to explicitly set the visibility for:
   - 'ALL' states combined.
   - Individual states ('NSW', 'QLD', 'VIC').
4. The first dropdown button ('ALL') is set as the active one by default using the `active` parameter in the layout.
5. The `args` parameter in each button updates the `visible` property of the traces and dynamically updates the chart title.