Program10 :Explore interactive and web-based data visualization using Plotly. Create dynamic visualizations that can be embedded in web applications.

Step1: Figure Instance

```
import plotly.express as px

# Creating the Figure instance
fig = px.line(x=[1,2, 3], y=[1, 2, 3])

# printing the figure instance
print(fig)
```

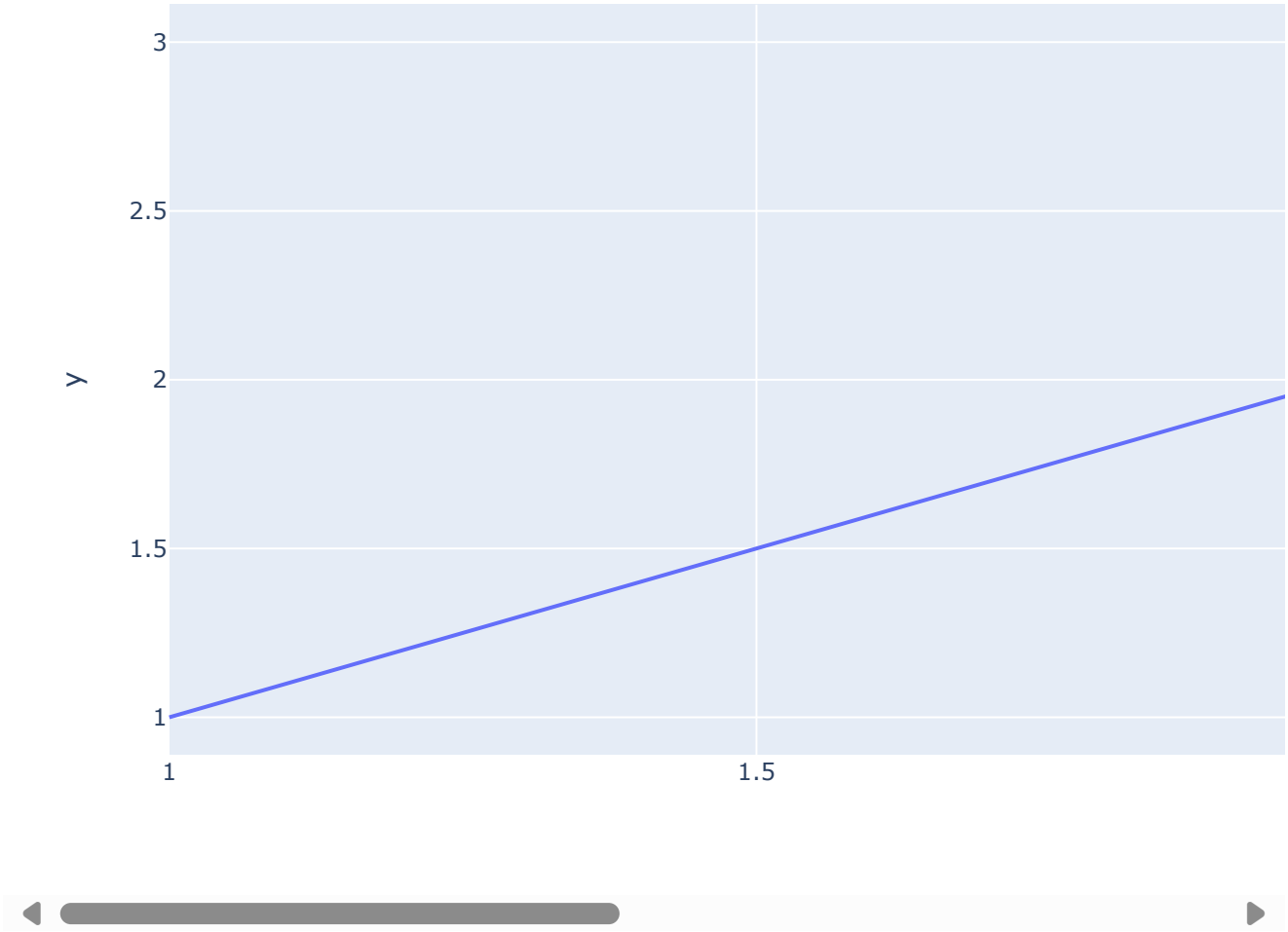
```
Figure({
    'data': [{'hovertemplate': 'x=%{x}<br>y=%{y}<extra></extra>',
              'legendgroup': '',
              'line': {'color': '#636efa', 'dash': 'solid'},
              'marker': {'symbol': 'circle'},
              'mode': 'lines',
              'name': '',
              'orientation': 'v',
              'showlegend': False,
              'type': 'scatter',
              'x': array([1, 2, 3]),
              'xaxis': 'x',
              'y': array([1, 2, 3]),
              'yaxis': 'y'}],
    'layout': {'legend': {'tracegroupgap': 0},
               'margin': {'t': 60},
               'template': '...',
               'xaxis': {'anchor': 'y', 'domain': [0.0, 1.0], 'title': {'text': 'x'}}
               'yaxis': {'anchor': 'x', 'domain': [0.0, 1.0], 'title': {'text': 'y'}}
})
```

**Step2: Create a Simple figure instance **

```
import plotly.express as px

# Creating the Figure instance
fig = px.line(x=[1, 2, 3], y=[1, 2, 3])

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



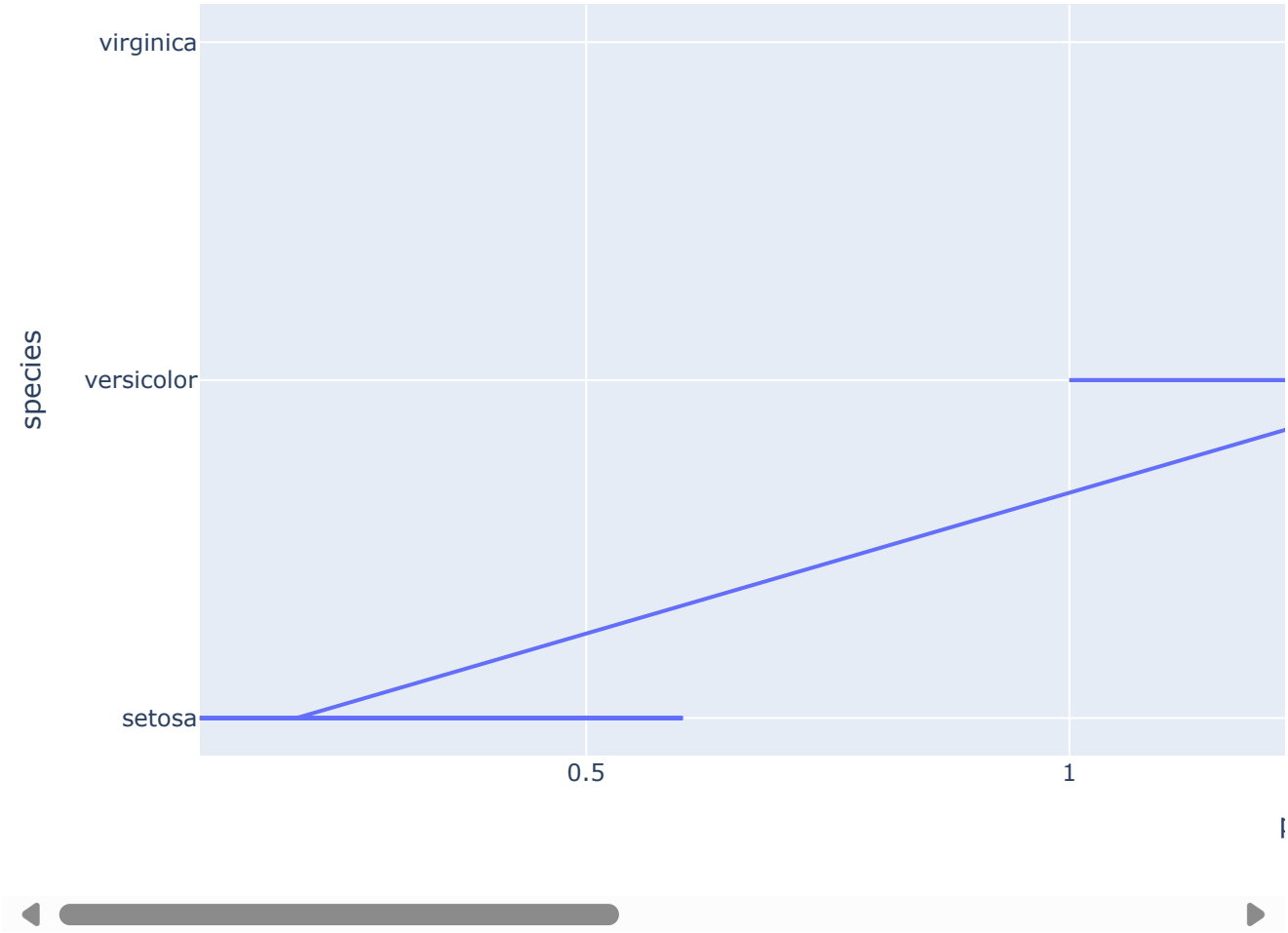
Step3: Plot line plot with X and Y

```
import plotly.express as px

# using the iris dataset
df = px.data.iris()

# plotting the line chart
fig = px.line(df, x="petal_width", y="species")

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



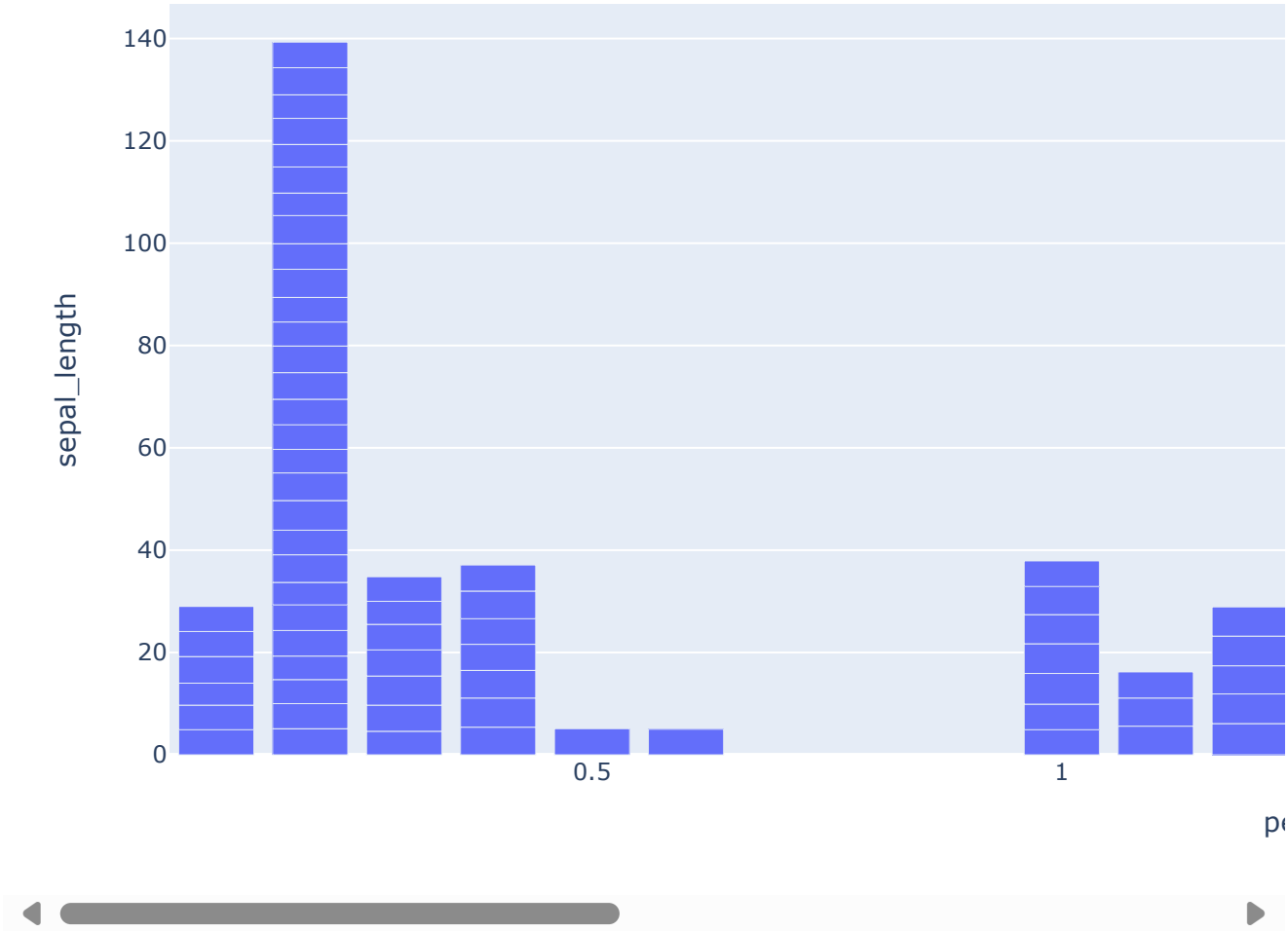
Step 4: Plot bar chart

```
import plotly.express as px

# using the iris dataset
df = px.data.iris()

# plotting the bar chart
fig = px.bar(df, x="petal_width", y="sepal_length")

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

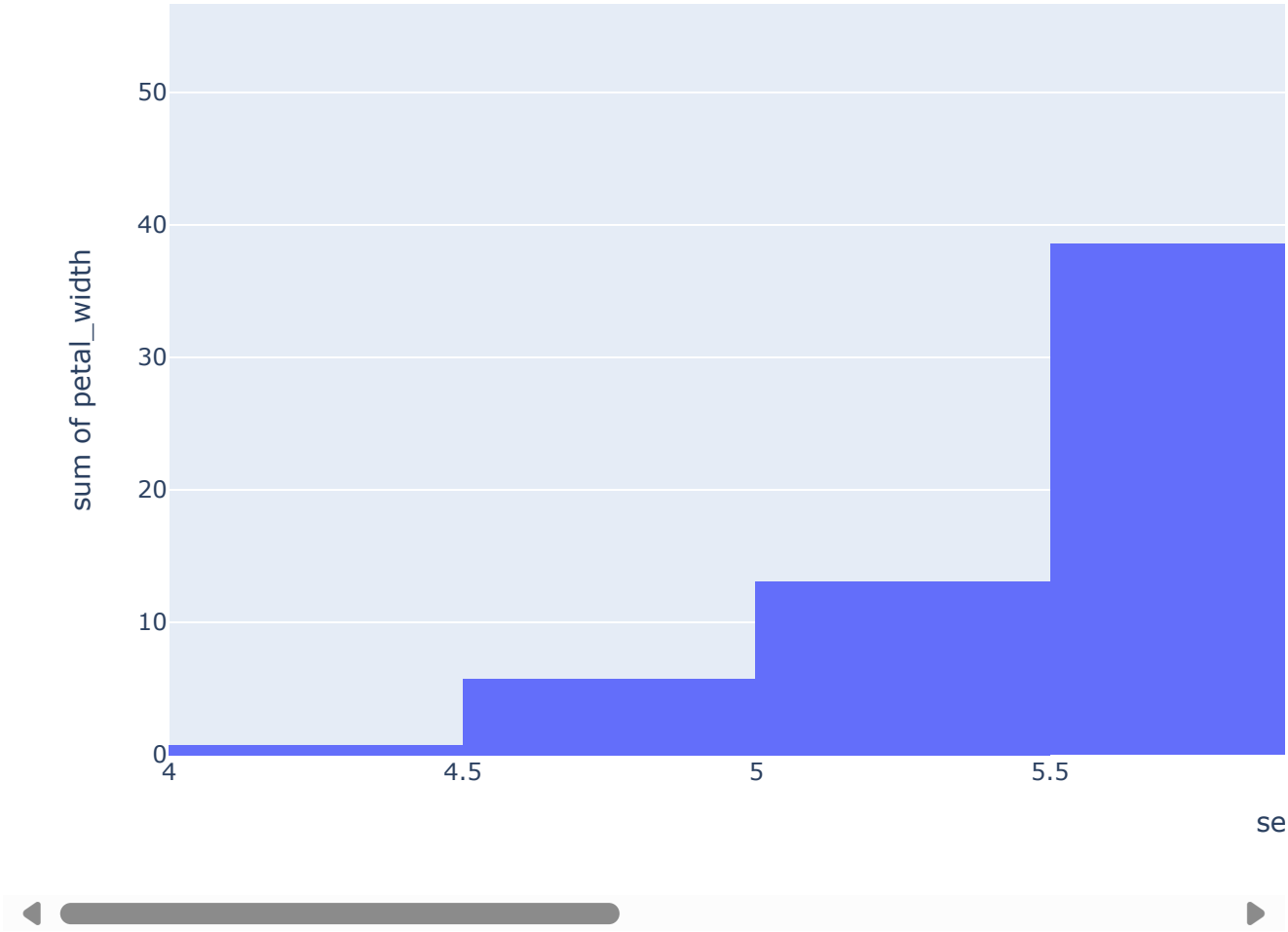



```
import plotly.express as px

# using the iris dataset
df = px.data.iris()

# plotting the histogram
fig = px.histogram(df, x="sepal_length", y="petal_width")

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

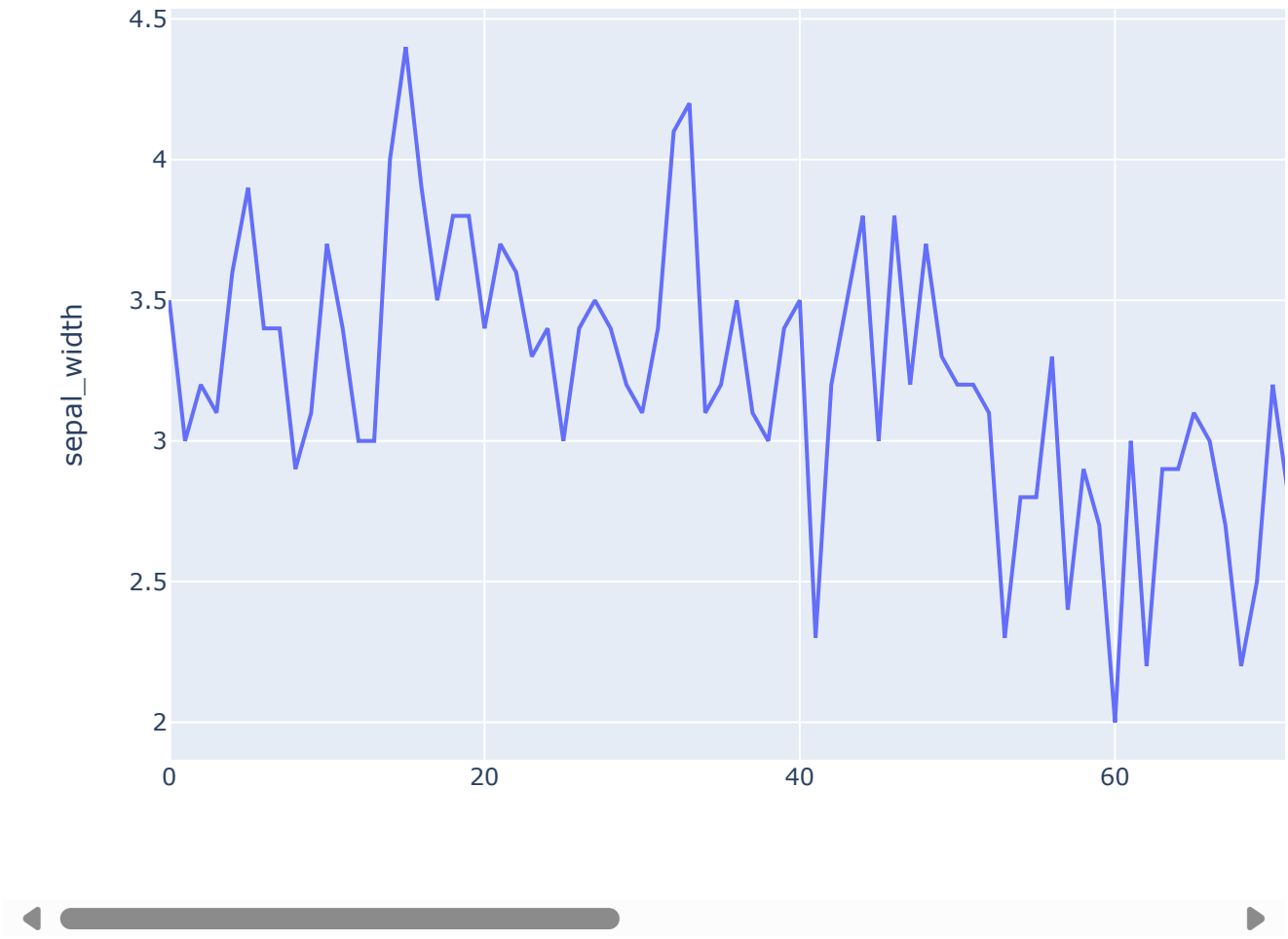



```
import plotly.express as px

# using the iris dataset
df = px.data.iris()

# plotting the line chart
fig = px.line(df, y="sepal_width",)

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

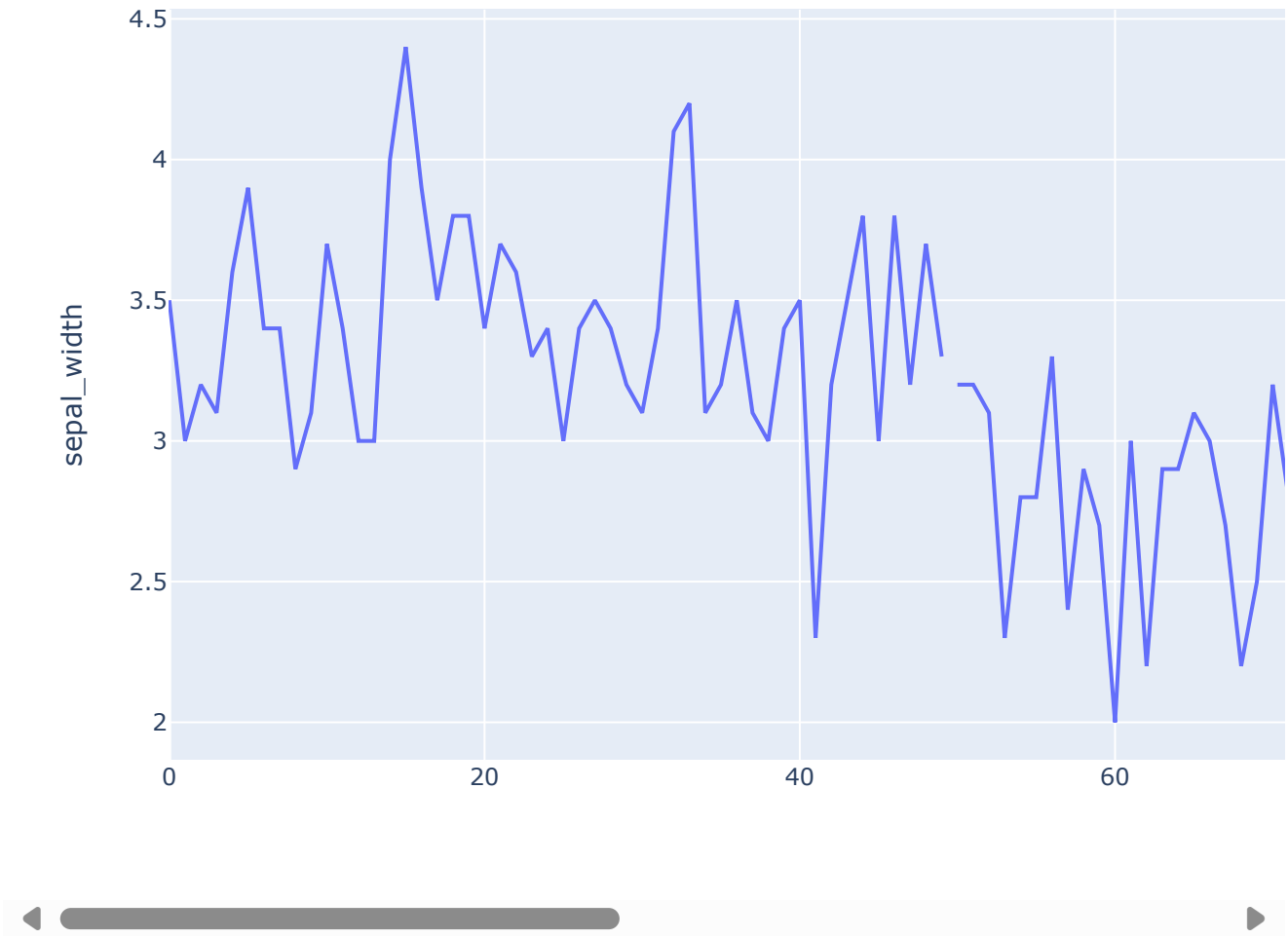



```
import plotly.express as px

# using the iris dataset
df = px.data.iris()

# plotting the line chart
fig = px.line(df, y="sepal_width", line_group='species')

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

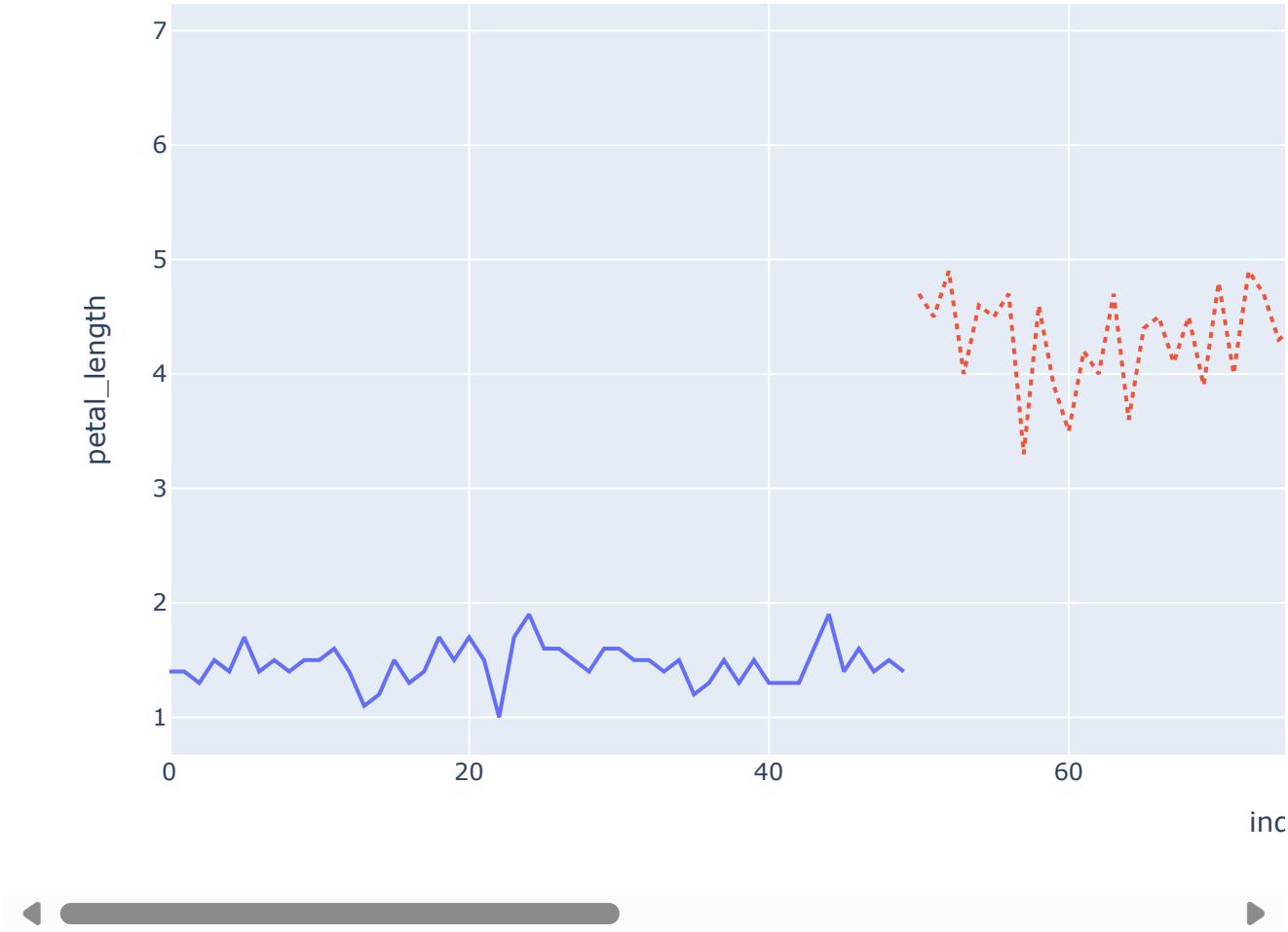



```
import plotly.express as px

# using the iris dataset
df = px.data.iris()

# plotting the line chart
fig = px.line(df, y="petal_length", line_dash='species',
              color='species')

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

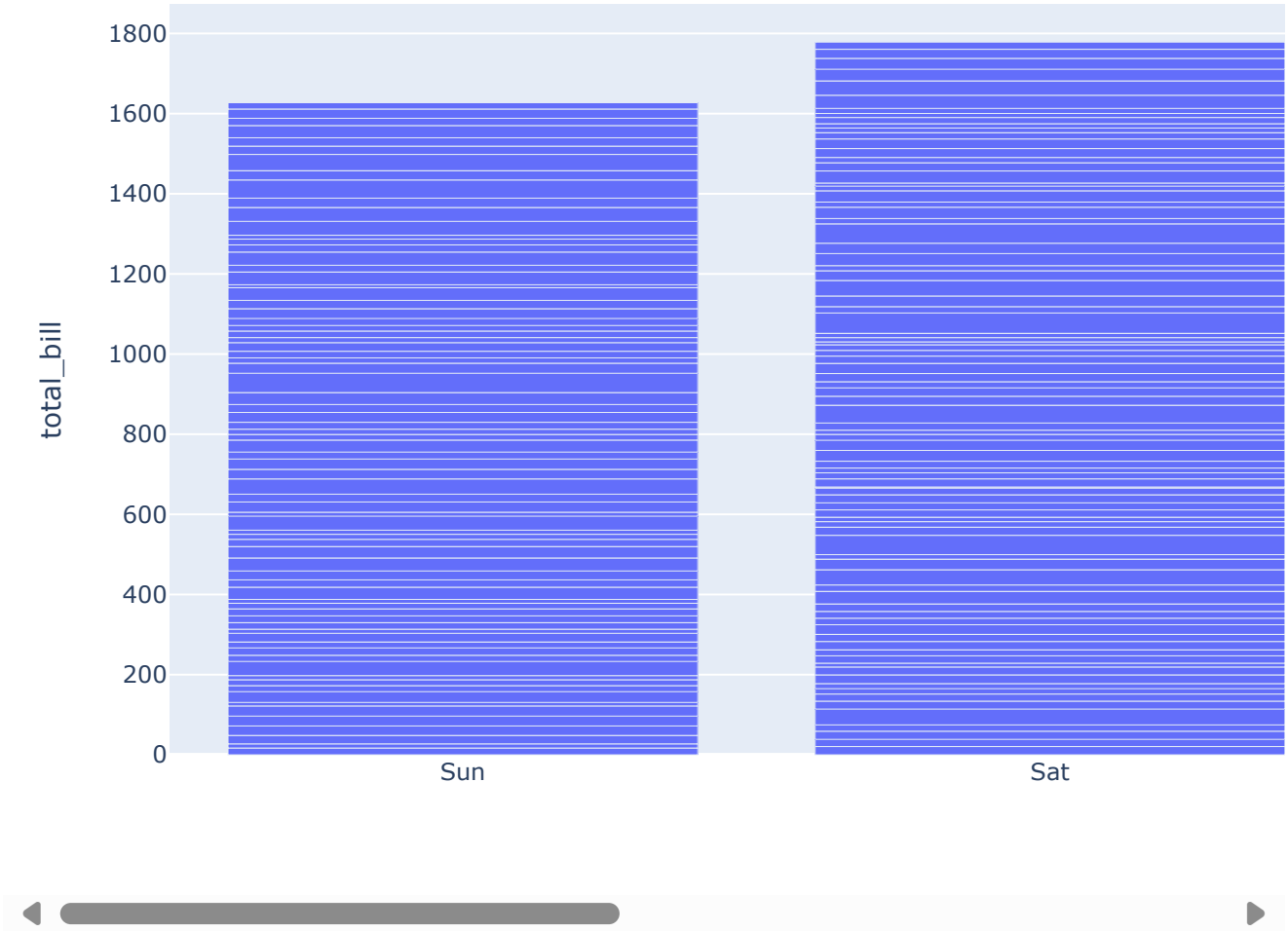



```
import plotly.express as px

# Loading the data
df = px.data.tips()

# Creating the bar chart
fig = px.bar(df, x='day', y="total_bill")

fig.show()
```

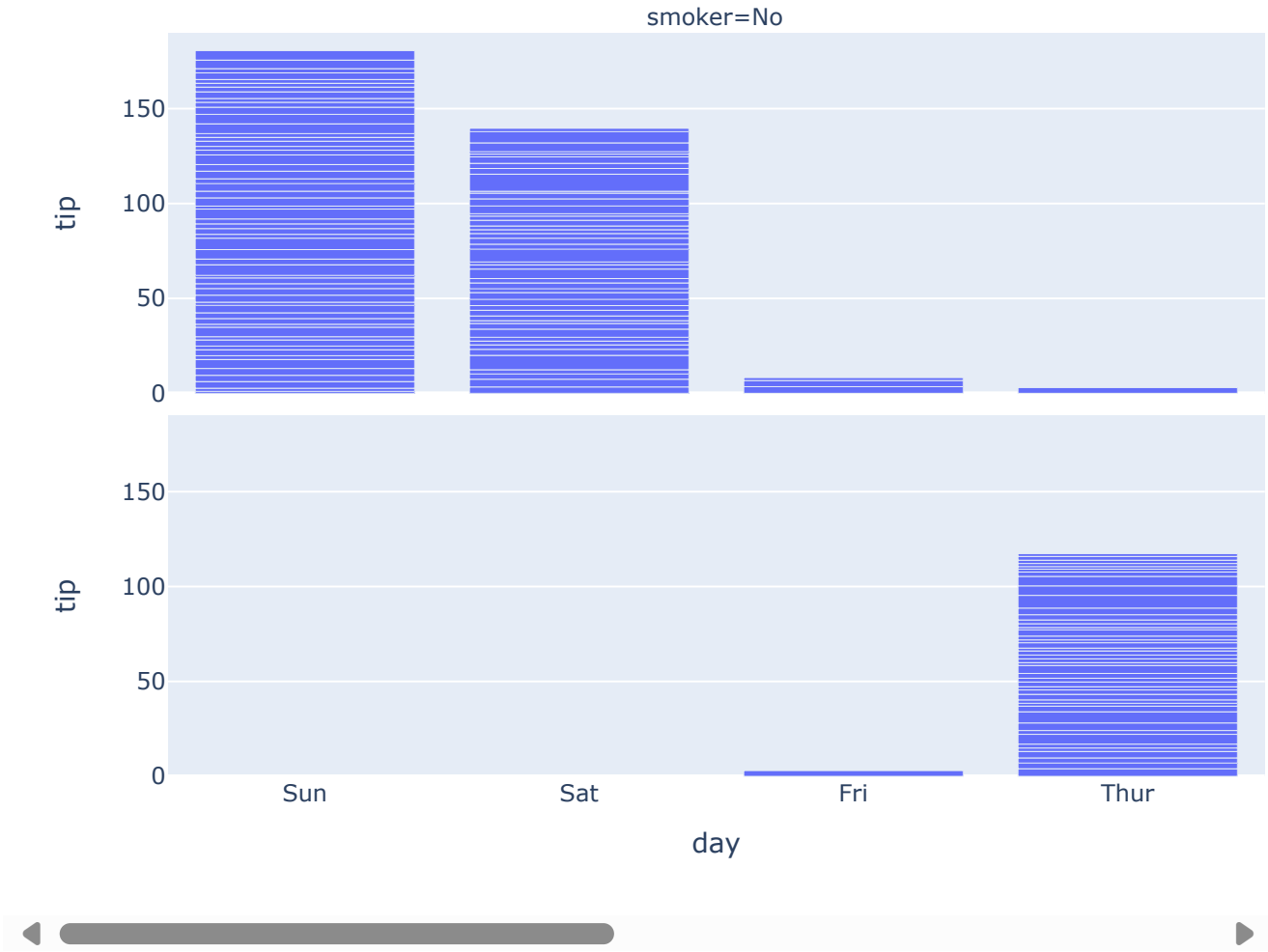



```
import plotly.express as px

# Loading the data
df = px.data.tips()

# Creating the bar chart
fig = px.bar(df, x='day', y="tip", color='smoker',
             facet_row='time', facet_col='smoker')

fig.show()
```

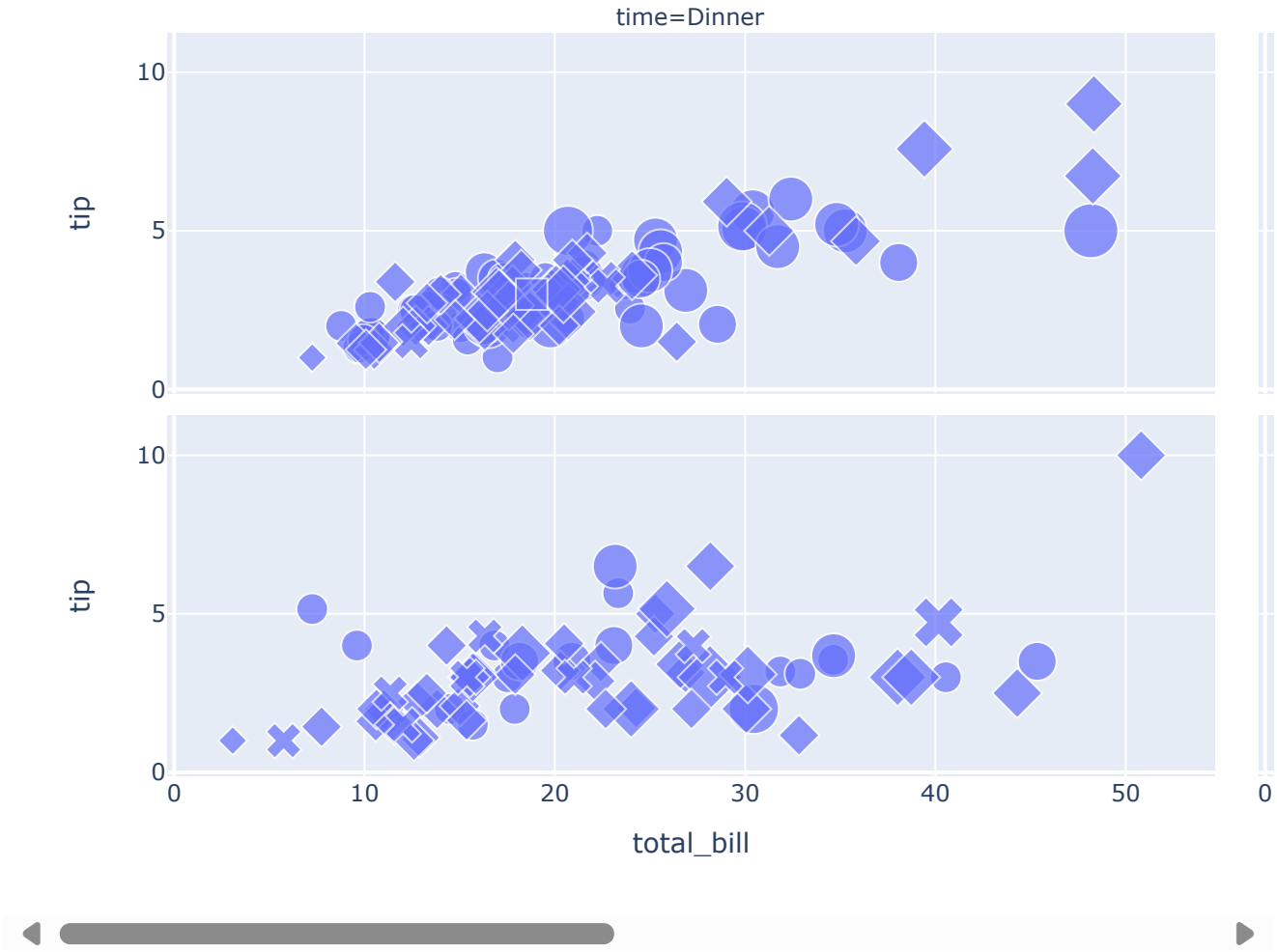



```
import plotly.express as px

# using the dataset
df = px.data.tips()

# plotting the scatter chart
fig = px.scatter(df, x='total_bill', y="tip", color='time',
                 symbol='day', size='size', facet_row='smoker',
                 facet_col='time')

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




```
import plotly.express as px

# data to be plotted
df = px.data.tips()

# plotting the figure
fig = px.scatter_3d(df, x="total_bill", y="sex", z="tip")

fig.show()
```