In [1]:
```
import pandas as pd
```

In [2]:
```
data = {
    "Month": ["Jan", "Feb", "Mar", "Apr", "May", "Jun"],
    "Sales": [10000, 12000, 15000, 13000, 17000, 16000],
    "Profit": [2000, 3000, 4000, 2500, 3500, 3000]
}

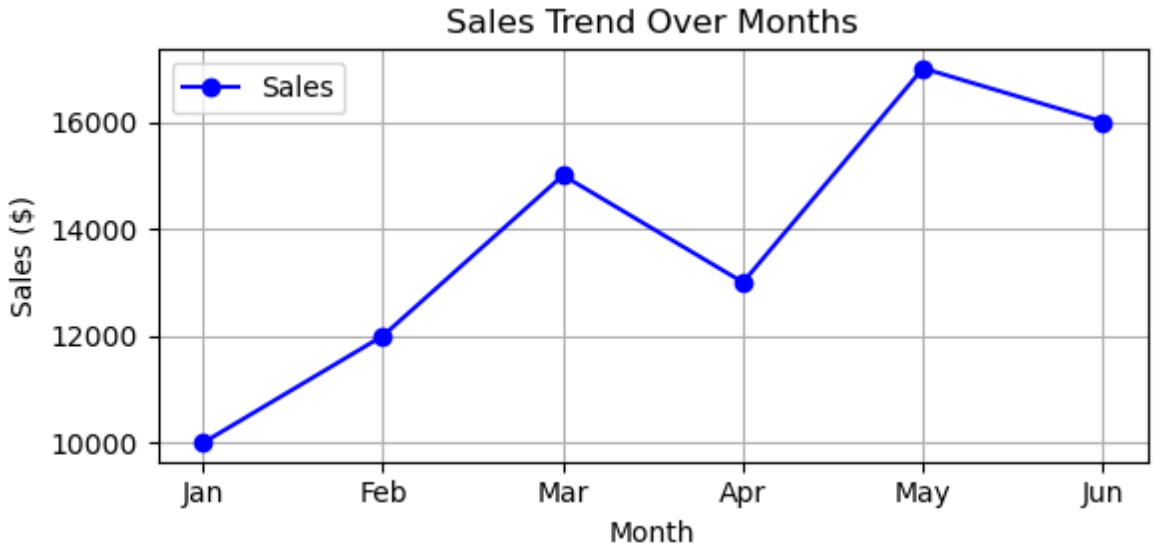
df = pd.DataFrame(data)
```

In [4]:
```
print(df)
```

```
  Month  Sales  Profit
0   Jan  10000    2000
1   Feb  12000    3000
2   Mar  15000    4000
3   Apr  13000    2500
4   May  17000    3500
5   Jun  16000    3000
```

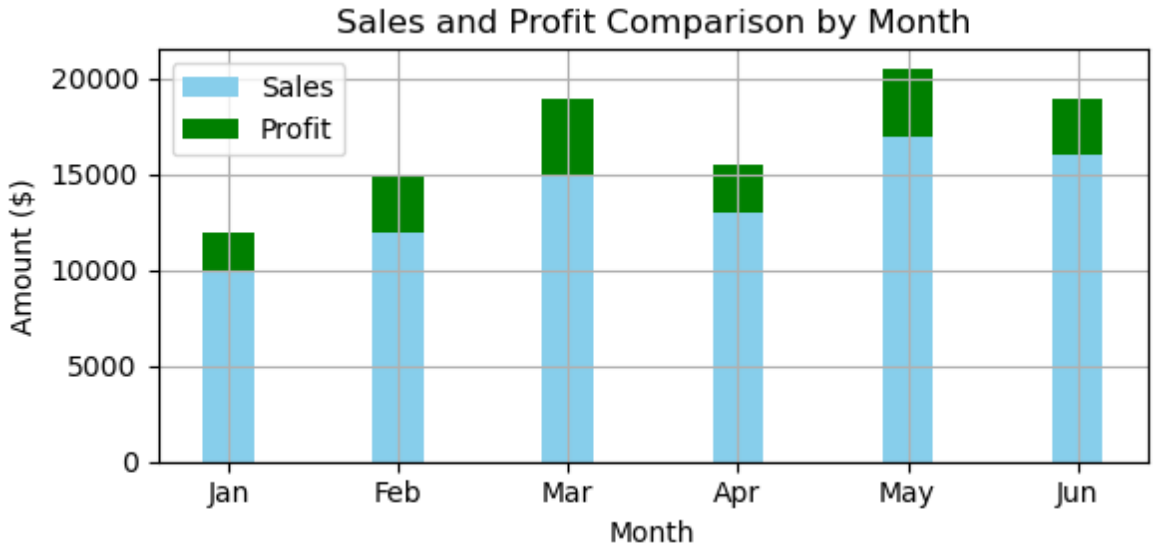
In [5]:
```
import matplotlib.pyplot as plt
```

In [9]:
```
plt.figure(figsize=(6, 3))
plt.plot(df['Month'], df['Sales'], color='blue', marker='o', linestyle='-', labe
plt.title('Sales Trend Over Months')
plt.xlabel('Month')
plt.ylabel('Sales ($)')
plt.grid(True)
plt.legend()
plt.tight_layout()
plt.show()
```

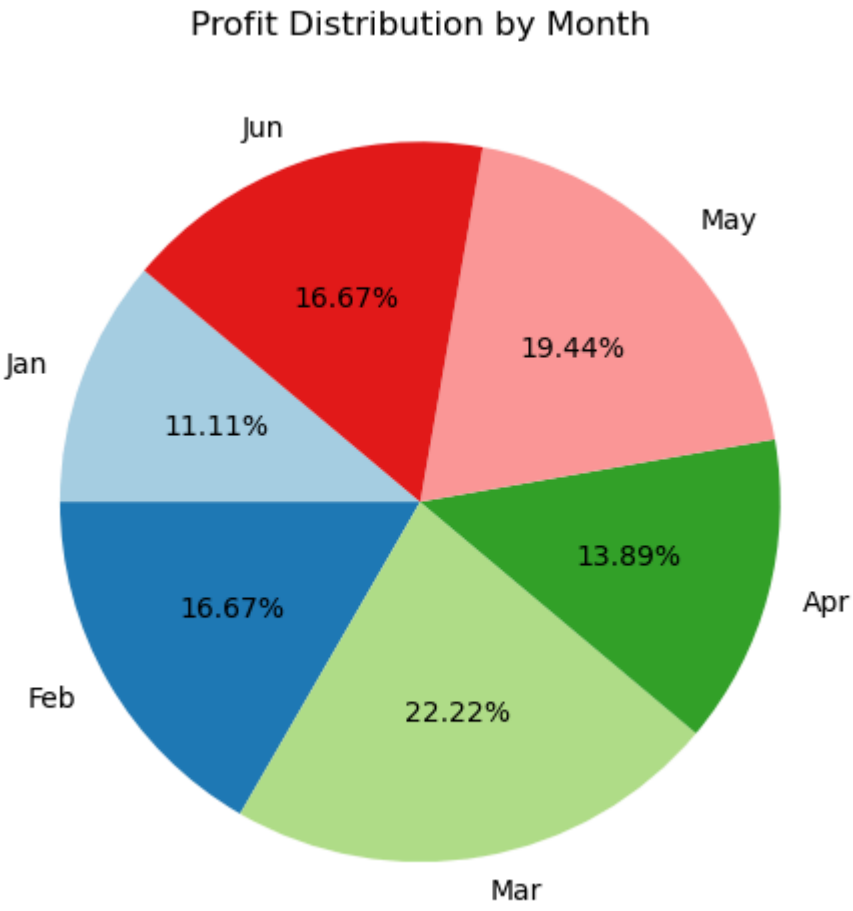


In [12]:
```
plt.figure(figsize=(6, 3))
width = 0.3
plt.bar(df['Month'], df['Sales'], width=width, label='Sales', color='skyblue')
plt.bar(df['Month'], df['Profit'], width=width, label='Profit', color='green', b
plt.title('Sales and Profit Comparison by Month')
plt.xlabel('Month')
plt.ylabel('Amount ($)')
plt.grid(True)
```

```
plt.legend()
plt.tight_layout()
plt.show()
```

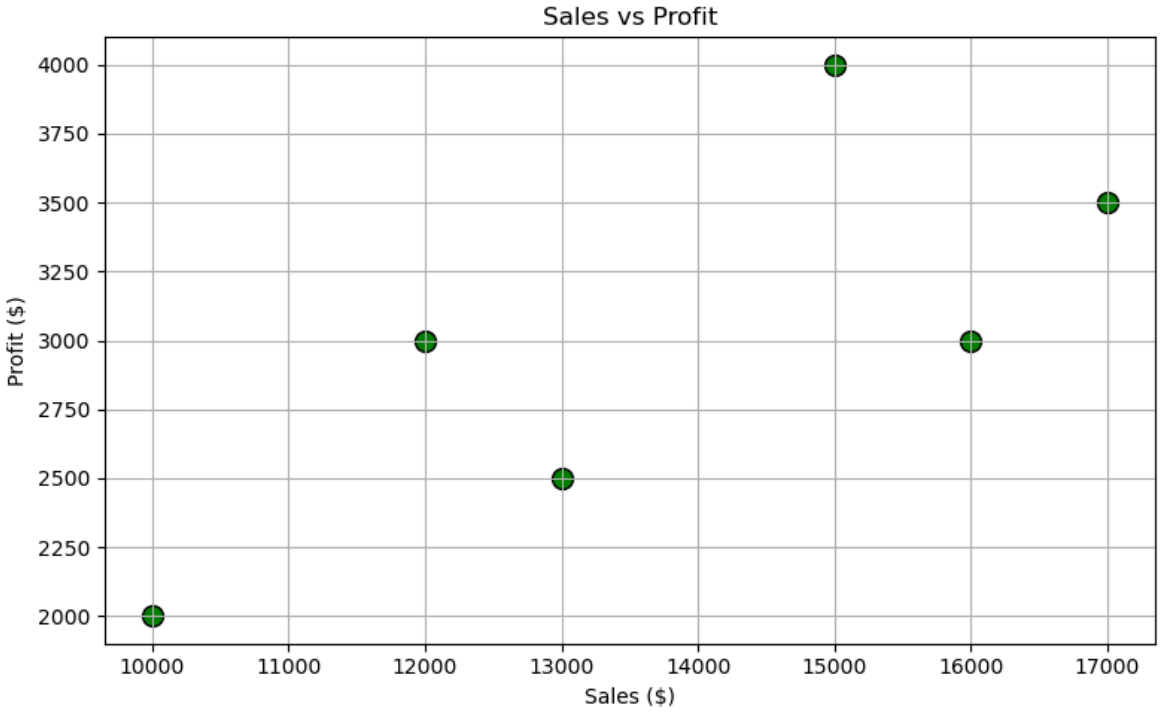


In [16]:
```
plt.figure(figsize=(10, 5))
plt.pie(df['Profit'], labels=df['Month'], autopct='%1.2f%%', startangle=140, col
plt.title('Profit Distribution by Month')
plt.tight_layout()
plt.show()
```

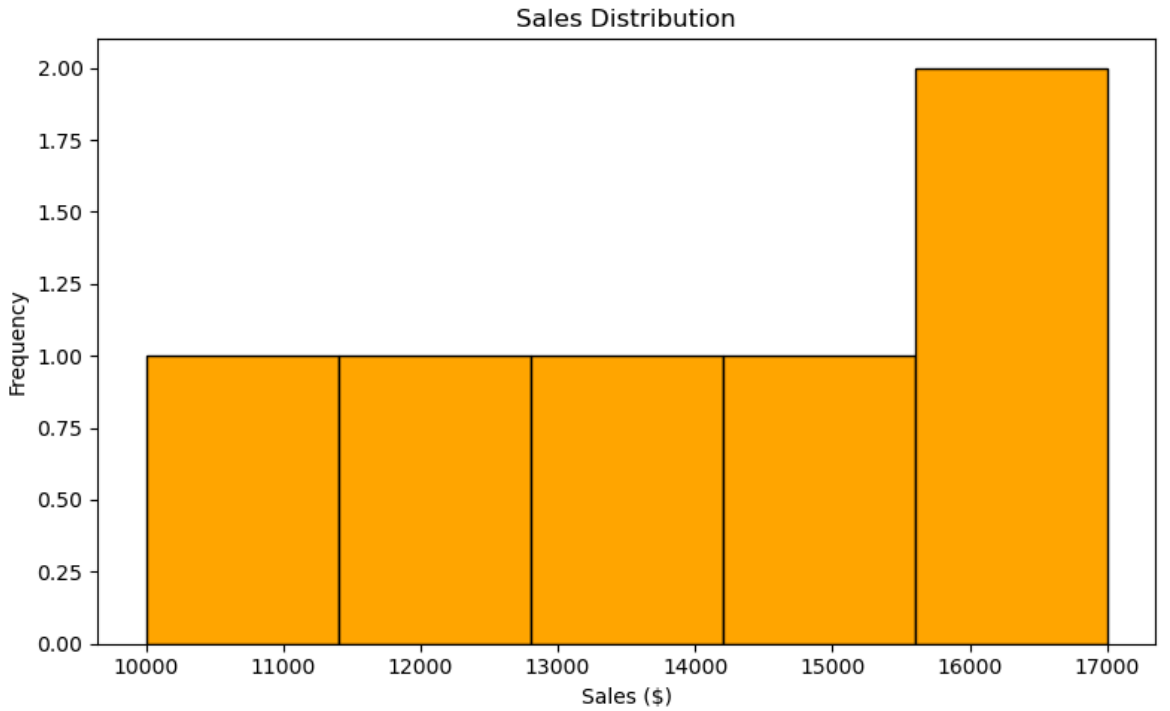


In [18]:
```
plt.figure(figsize=(8, 5))
plt.scatter(df['Sales'], df['Profit'], color='green', s=100, edgecolors='black')
```

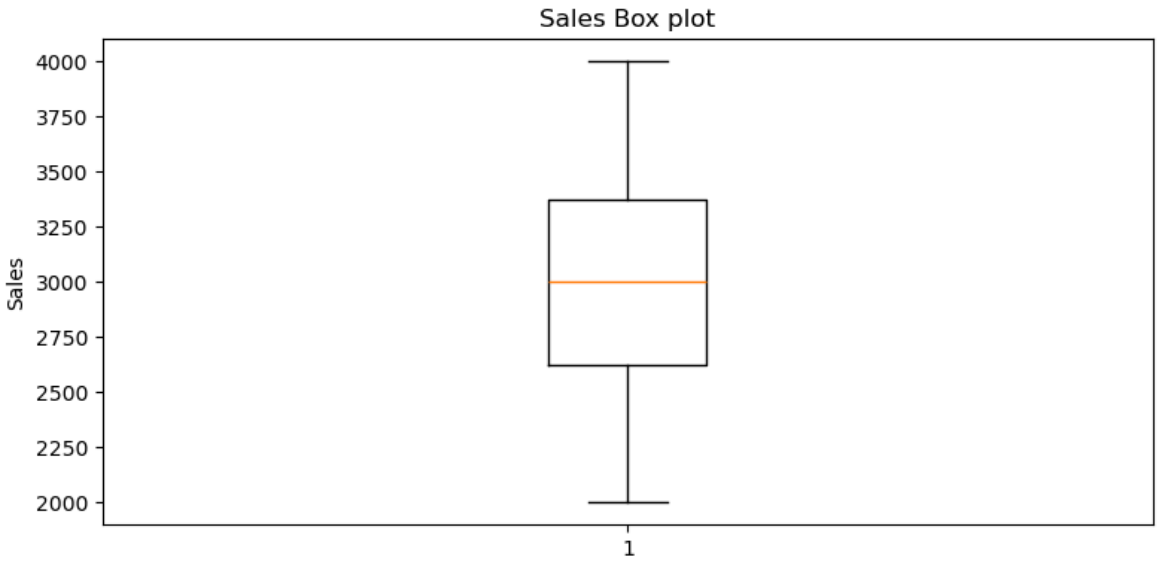
```
plt.title('Sales vs Profit')
plt.xlabel('Sales ($)')
plt.ylabel('Profit ($)')
plt.grid(True)
plt.tight_layout()
plt.show()
```



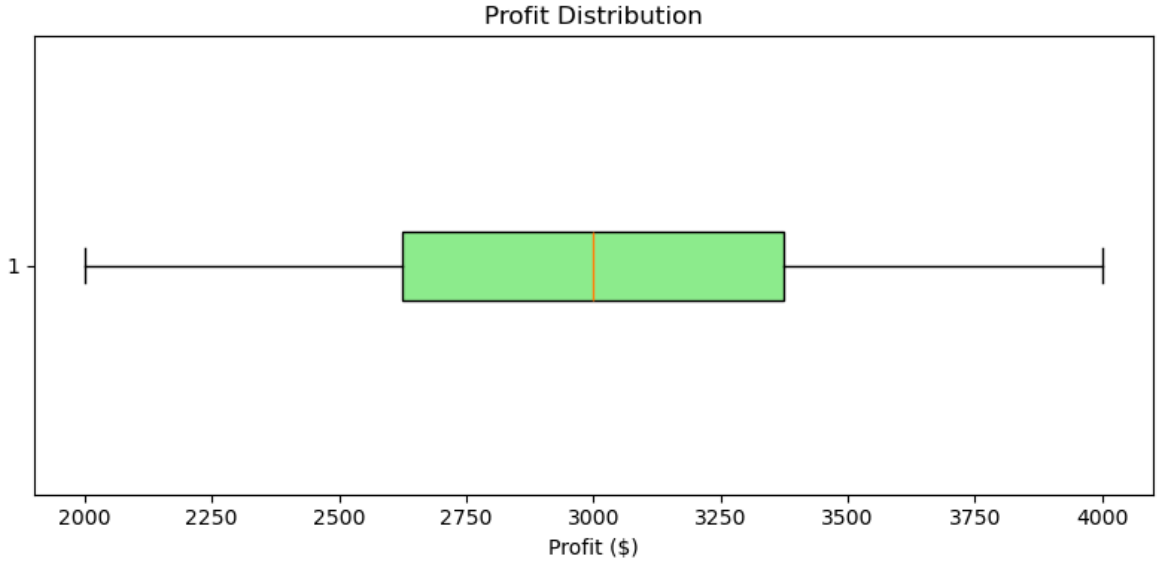
In [22]:
```
plt.figure(figsize=(8, 5))
plt.hist(df['Sales'], bins=5, color='orange', edgecolor='black')
plt.title('Sales Distribution')
plt.xlabel('Sales ($)')
plt.ylabel('Frequency')
plt.tight_layout()
plt.show()
```



In [25]:
```
plt.figure(figsize=(8, 4))
plt.boxplot(df['Profit'])
plt.title('Sales Box plot')
plt.ylabel('Sales')
plt.tight_layout()
plt.show()
```



In [24]:
```
plt.figure(figsize=(8, 4))
plt.boxplot(df['Profit'], vert=False, patch_artist=True, boxprops=dict(facecolor
plt.title('Profit Distribution')
plt.xlabel('Profit ($)')
plt.tight_layout()
plt.show()
```



In [26]:
```
!pip install gradio
```

```
Collecting gradio
  Downloading gradio-5.36.2-py3-none-any.whl.metadata (16 kB)
Collecting aiofiles<25.0,>=22.0 (from gradio)
  Downloading aiofiles-24.1.0-py3-none-any.whl.metadata (10 kB)
Requirement already satisfied: anyio<5.0,>=3.0 in c:\users\dell\anaconda3\lib\sit
e-packages (from gradio) (4.2.0)
Collecting brotli>=1.1.0 (from gradio)
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Collecting fastapi<1.0,>=0.115.2 (from gradio)
  Downloading fastapi-0.116.1-py3-none-any.whl.metadata (28 kB)
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Collecting gradio-client==1.10.4 (from gradio)
  Downloading gradio_client-1.10.4-py3-none-any.whl.metadata (7.1 kB)
Collecting groovy~=0.1 (from gradio)
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\site-packages (from gradio) (0.27.0)
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Requirement already satisfied: numpy<3.0,>=1.0 in c:\users\dell\anaconda3\lib\sit
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Collecting ruff>=0.9.3 (from gradio)
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Collecting starlette<1.0,>=0.40.0 (from gradio)
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  Downloading typer-0.16.0-py3-none-any.whl.metadata (15 kB)
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  Downloading uvicorn-0.35.0-py3-none-any.whl.metadata (6.5 kB)
Requirement already satisfied: fsspec in c:\users\dell\anaconda3\lib\site-package
s (from gradio-client==1.10.4->gradio) (2024.6.1)
```

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Collecting websockets<16.0,>=10.0 (from gradio-client==1.10.4->gradio)
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Requirement already satisfied: idna>=2.8 in c:\users\dell\anaconda3\lib\site-pack
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Requirement already satisfied: six>=1.5 in c:\users\dell\anaconda3\lib\site-packa
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Downloading groovy-0.1.2-py3-none-any.whl (14 kB)
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Downloading websockets-15.0.1-cp312-cp312-win_amd64.whl (176 kB)
Installing collected packages: pydub, brotli, websockets, tomlkit, semantic-versi
on, ruff, python-multipart, orjson, groovy, ffmpy, aiofiles, uvicorn, starlette,
huggingface-hub, typer, safehttpx, gradio-client, fastapi, gradio
  Attempting uninstall: brotli
    Found existing installation: Brotli 1.0.9
    Uninstalling Brotli-1.0.9:
      Successfully uninstalled Brotli-1.0.9
  Attempting uninstall: tomlkit
    Found existing installation: tomlkit 0.11.1
    Uninstalling tomlkit-0.11.1:
      Successfully uninstalled tomlkit-0.11.1
  Attempting uninstall: typer
```

```
    Found existing installation: typer 0.9.0
    Uninstalling typer-0.9.0:
      Successfully uninstalled typer-0.9.0
Successfully installed aiofiles-24.1.0 brotli-1.1.0 fastapi-0.116.1 ffmpy-0.6.0 g
radio-5.36.2 gradio-client-1.10.4 groovy-0.1.2 huggingface-hub-0.33.4 orjson-3.1
0.18 pydub-0.25.1 python-multipart-0.0.20 ruff-0.12.3 safehttpx-0.1.6 semantic-ve
rsion-2.10.0 starlette-0.47.1 tomlkit-0.13.3 typer-0.16.0 uvicorn-0.35.0 websocke
ts-15.0.1
  WARNING: Failed to remove contents in a temporary directory 'C:\Users\DELL\AppD
ata\Local\Temp\pip-uninstall-39_cb9s4'.
  You can safely remove it manually.
```

In [32]:

```
import gradio as gr
import pandas as pd
import matplotlib.pyplot as plt

# Sample data
data = {
    "Month": ["Jan", "Feb", "Mar", "Apr", "May", "Jun"],
    "Sales": [10000, 12000, 15000, 13000, 17000, 16000],
    "Profit": [2000, 3000, 4000, 2500, 3500, 3000]
}
df = pd.DataFrame(data)

# Function to return selected plot
def generate_plot(plot_type):
    fig = plt.figure(figsize=(8, 5))

    if plot_type == "Line Plot":
        plt.plot(df['Month'], df['Sales'], color='blue', marker='o', label='Sale
        plt.title('Sales Trend Over Months')
        plt.xlabel('Month')
        plt.ylabel('Sales ($)')
        plt.grid(True)
        plt.legend()

    elif plot_type == "Stacked Bar Chart":
        fig.set_size_inches(10, 6)
        width = 0.3
        plt.bar(df['Month'], df['Sales'], width=width, label='Sales', color='sky
        plt.bar(df['Month'], df['Profit'], width=width, label='Profit', color='c
        plt.title('Sales and Profit Comparison by Month')
        plt.xlabel('Month')
        plt.ylabel('Amount ($)')
        plt.legend()

    elif plot_type == "Pie Chart":
        fig.set_size_inches(7, 7)
        plt.pie(df['Profit'], labels=df['Month'], autopct='%1.1f%%', startangle=
        plt.title('Profit Distribution by Month')

    elif plot_type == "Scatter Plot":
        plt.scatter(df['Sales'], df['Profit'], color='green', s=100, edgecolors=
        plt.title('Sales vs Profit')
        plt.xlabel('Sales ($)')
        plt.ylabel('Profit ($)')
        plt.grid(True)

    elif plot_type == "Histogram":
        plt.hist(df['Sales'], bins=5, color='purple', edgecolor='black')
```

```
        plt.title('Sales Distribution')
        plt.xlabel('Sales ($)')
        plt.ylabel('Frequency')

    elif plot_type == "Box Plot":
        plt.boxplot(df['Profit'], vert=False, patch_artist=True, boxprops=dict(f
        plt.title('Profit Distribution')
        plt.xlabel('Profit ($)')
    plt.tight_layout()
    return fig


# Gradio UI
demo = gr.Interface(
    fn=generate_plot,
    inputs=gr.Radio(
        ["Line Plot", "Stacked Bar Chart", "Pie Chart", "Scatter Plot", "Histogr
        label="Choose Plot Type"
    ),
    outputs=gr.Plot(label="Visualization"),
    title="Sales & Profit Visual Explorer",
    description="Choose a chart type to visualize the data."
)

demo.launch()
```

```
* Running on local URL:  http://127.0.0.1:7861
* To create a public link, set `share=True` in `launch()`.
```

Out[32]:

In [ ]: