In [ ]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

Numerical data

Line chart

In [ ]:
```
df=pd.DataFrame({"Year":[1990,1991,1992,1993,1994,1995,1996,1997,1998,1999,2000],
                 "Weight":[76,64,65,70,78,79,75,74,69,68,65],
                "Height":[167,168,168,168,169,170,171,171,172,173,174]})
df
```

In [ ]:
```
df.plot.line(y="Weight",figsize=(8,4))
plt.xlabel("Index")
plt.ylabel("Weight")
plt.title("Weight with years")
plt.show()
```

Histogram

In [ ]:
```
df=pd.DataFrame({"Col01":np.random.random(100),"Col02":np.random.randn(100)})
df.head()
```

In [ ]:
```
df["Col01"].hist()
plt.xlabel("Col01")
plt.ylabel("Frequency")
plt.title("Col01 Histogram")
plt.show()
```

In [ ]:
```
df["Col02"].hist()
plt.xlabel("Col02")
plt.ylabel("Frequency")
plt.title("Col02 Histogram")
plt.show()
```

Boxplot

In [ ]:
```
df=pd.DataFrame({"Col01":np.random.random(100),"Col02":np.random.random(100)})
df.head()
```

In [ ]:
```
df["Col01"].plot.box()
plt.title("Col01 Boxplot")
plt.show()
```

Categorical data

Bar graphs

In [ ]:
```
data = {"City":["Kandy", "Colombo", "Galle"], "Visits":[50,45,70]}
df=pd.DataFrame(data)
df
```

In [ ]:
```
df.plot.bar(x="City", y="Visits")
plt.title("Tourist visits during last week")
plt.ylabel("Frequency")
plt.show()
```

In [ ]:
```
df.plot.barh(x="City", y="Visits")
plt.title("Tourist visits during last week")
plt.ylabel("Frequency")
plt.show()
```

Pie charts

In [ ]:
```
data = {"Visits":[50,45,70]}
df=pd.DataFrame(data,index=["Kandy", "Colombo", "Galle"])
df
```

In [ ]:
```
df.plot.pie(y="Visits",figsize=(8,10))
plt.title("Tourist visits during last week")
plt.ylabel("Frequency")
plt.show()
```

Numerical VS Numerical data

Scatter plots

In [ ]:
```
df=pd.DataFrame({"Col01":np.random.random(100),"Col02":np.random.randn(100),"Col03":np.random.randn(100)})
df.head()
```

In [ ]:
```
df.plot.scatter(x="Col01", y="Col02")
plt.title("Col01 VS Col02")
plt.show()
```

Categorical VS Categorical data

Multiple bar graphs

In [ ]:
```
df=pd.DataFrame({"Maths":[90,60],"Science":[78,83]},index=["Male","Female"])
df
```

In [ ]:
```
df.plot.bar()
plt.title("Maths & Science marks with gender")
plt.ylabel("Frequency")
plt.show()
```

In [ ]:
```
df.plot.barh()
plt.title("Maths & Science marks with gender")
plt.ylabel("Frequency")
plt.show()
```

Stacked bar graphs

In [ ]:
```
df.plot.bar(stacked=True)
plt.title("Maths & Science marks with gender")
plt.ylabel("Frequency")
plt.show()
```

In [ ]:
```
df.plot.barh(stacked=True)
plt.title("Maths & Science marks with gender")
plt.ylabel("Frequency")
plt.show()
```

Numerical VS Categorical data

Side by side boxplots

In [ ]:
```
data={"Cat":["A","A","A","A","A","B","B","B","B","B","C","C","C","C","C"],
     "Val":np.random.random(15)}
df=pd.DataFrame(data)
df
```

In [ ]:
```
df.boxplot("Val",by="Cat",figsize=(8,7))
plt.show()
```