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import seaborn as sns
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np

df = pd.DataFrame()

from re import X
x = pd.Series([12,25,68,42,113])
y = pd.Series([11,29,58,121,100])

df['x'] = x
df['y'] = y

```

df

	x	y
0	12	11
1	25	29
2	68	58
3	42	121
4	113	100

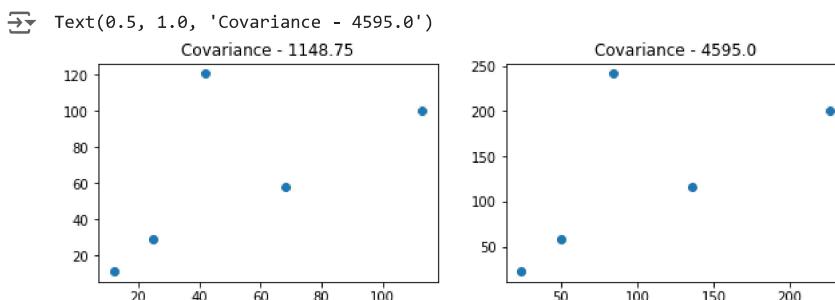
```

fig, (ax1, ax2) = plt.subplots(1, 2, figsize=(10, 3))

# Plot scatterplots on each axes
ax1.scatter(df['x'], df['y'])
ax2.scatter(df['x']*2, df['y']*2)

ax1.set_title("Covariance - " + str(np.cov(df['x'], df['y'])[0,1]))
ax2.set_title("Covariance - " + str(np.cov(df['x']*2, df['y']*2)[0,1]))

```



```

print(np.cov(df['x'], df['y'])[0,1])
print(np.cov(df['x']*2, df['y']*2)[0,1])

```

1148.75  
4595.0

```

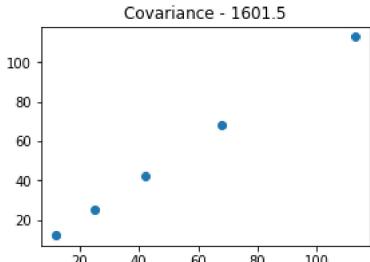
fig, ax = plt.subplots(1, 3, figsize=(15, 3))

# Plot scatterplots on each axes
ax[0].scatter(df['x'], df['x'])
ax[1].scatter(df['x'], df['y'])
ax[2].scatter(df['x']*2, df['y']*2)

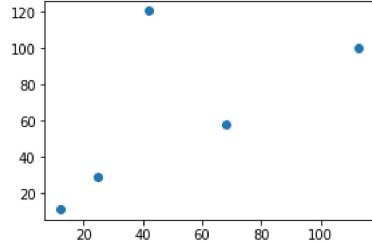
ax[0].set_title("Covariance - " + str(np.cov(df['x'], df['x'])[0,1]))
ax[1].set_title("Covariance - " + str(np.cov(df['x'], df['y'])[0,1]))
ax[2].set_title("Covariance - " + str(np.cov(df['x']*2, df['y']*2)[0,1]))

```

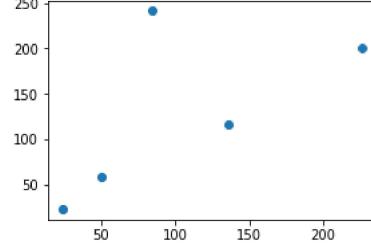
Text(0.5, 1.0, 'Covariance - 4595.0')



Covariance - 1148.75



Covariance - 4595.0



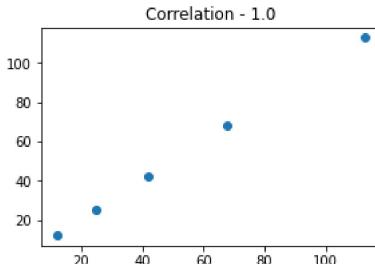
## Correlation

```
fig, (ax1, ax2) = plt.subplots(1, 2, figsize=(10, 3))

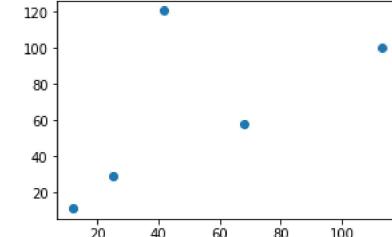
# Plot scatterplots on each axes
ax1.scatter(df['x'], df['x'])
ax2.scatter(df['x'], df['y'])

ax1.set_title("Correlation - " + str(df['x'].corr(df['x'])))
ax2.set_title("Correlation - " + str((df['x']).corr(df['y'])))
```

Text(0.5, 1.0, 'Correlation - 0.6185423626205997')



Correlation - 0.6185423626205997

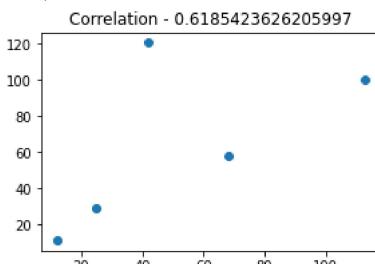


```
fig, (ax1, ax2) = plt.subplots(1, 2, figsize=(10, 3))
```

```
# Plot scatterplots on each axes
ax1.scatter(df['x'], df['y'])
ax2.scatter(df['x']*2, df['y'])

ax1.set_title("Correlation - " + str(df['x'].corr(df['y'])))
ax2.set_title("Correlation - " + str((df['x']*2).corr(df['y']*2)))
```

Text(0.5, 1.0, 'Correlation - 0.6185423626205997')



Correlation - 0.6185423626205997

