

Consider the following matrix X:

```
[[4.  2.  0.6 ]
 [4.2 2.1 0.59]
 [3.9 2.  0.58]
 [4.3 2.1 0.62]
 [4.1 2.2 0.63]]
```

INPUT: (Python Code)

```
import numpy as np

X = np.array([[4, 2, 0.6], [4.2, 2.1, 0.59], [3.9, 2, 0.58], [4.3, 2.1, 0.62], [4.1, 2.2, 0.63]])

print ("Shape of array:\n", np.shape(x))

print ("Covariance matrix of x:\n", np.cov(x))
```

OUTPUT:

```
print ("Original Matrix = ", X)
```

```
[[4.  2.  0.6 ]
 [4.2 2.1 0.59]
 [3.9 2.  0.58]
 [4.3 2.1 0.62]
 [4.1 2.2 0.63]]
```

Covariance matrix of X:

```
[[2.92      3.098      2.846      3.164      2.966      ]
 [3.098      3.28703333 3.0199      3.3566      3.1479      ]
 [2.846      3.0199      2.7748      3.0832      2.8933      ]
 [3.164      3.3566      3.0832      3.4288      3.2122      ]
 [2.966      3.1479      2.8933      3.2122      3.0193      ]]
```

Expected Output: (As given in website:

<https://www.itl.nist.gov/div898/handbook/pmc/section5/pmc541.htm>)

Covariance matrix of X:

```
[[0.025  0.0075 0.00175]
 [0.0075 0.007  0.00135]
 [0.00175 0.00135 0.00043]]
```