

In [10]: *# Eigen Values and Eigen Vectors of the given matrix*

```
import numpy as np
arr = np.array([[ 4, -1], [2, 0]])
w, v = np.linalg.eig(arr)
print("The Eigen values:--", w)
print("The Eigen vectors:--\n", v)
```

The Eigen values:-- [3.41421356 0.58578644]

The Eigen vectors:--

```
[[0.86285621 0.28108464]
 [0.50544947 0.95968298]]
```

In [11]: *#Building an 2x3 array comprising of 6 normally distributed random numbers with mean 12 and standard deviation 10.*

```
from numpy import random
x = random.normal(size=(2, 3), loc=12, scale=10)
print("An 2x3 array comprising of 6 normally distributed random numbers with mean 12 and standard deviation 10:--\n", x)
```

An 2x3 array comprising of 6 normally distributed random numbers with mean 12 and standard deviation 10:--

```
[[17.14166717 29.75907934 14.01836117]
 [13.68814562  5.1294526  22.8998369 ]]
```

In [16]: *#Construct a program to create a 6x6 array with random values*

#find the minimum and maximum values

```
import numpy as np
arr = np.random.random((6,6))
print("Array:\n", arr)
arrmin = arr.min()
arrmax = arr.max()
print("Minimum Value of the array:--", arrmin)
print("Maximum Value of the array:--", arrmax)
```

Array:

```
[[0.62576362 0.07765091 0.28293767 0.19089695 0.96192769 0.11197353]
 [0.00568046 0.89910532 0.30098329 0.85036302 0.35673064 0.00525857]
 [0.73929445 0.71674399 0.57417545 0.71549516 0.28940589 0.18855227]
 [0.64926849 0.49435703 0.24354775 0.45861413 0.36248699 0.80140323]
 [0.32701041 0.51881838 0.75244219 0.6225237  0.13319041 0.32003072]
 [0.15968115 0.33691195 0.47745409 0.08184549 0.97882906 0.99440583]]
```

Minimum Value of the array:-- 0.005258566777959772

Maximum Value of the array:-- 0.9944058297591419

In []: