

EIGENVALUES-AND-EIGENVECTORS

› Aim:

To write a python program to find the Eigenvalues and Eigen Vectors

› Equipment's required:

1. Hardware – PCs
2. Anaconda – Python 3.7 Installation / Moodle-Code Runner

› Algorithm:

› Step1 :

Import the numpy module to use the built-in functions for calculations.

› Step 2:

Prepare the list from the given matrix and assign in np.array().

› Step 3:

Using the np.linalg.eig(), we get two results (first is eigenvalue and second is eigenvector) of the given matrix.

› Step 4:

End program.

› Program:

```
#Program to find the eigen values and eigen vectors. #Developed by: Divya R V
#RegisterNumber:23014030 import numpy as np a=np.array([[2,-3,0],[2,-5,0],[0,0,3]])
values,vector=np.linalg.eig(a) print("Eigen values are {} and Eigen Vectors are {}".format(values,vector))
```

› Output:

Answer: (penalty regime: 0 %)

Reset answer

```
1 #Program to find the eigen values and eigen vectors.
2 #Developed by: Divya R V
3 #RegisterNumber:23014030
4 import numpy as np
5 a=np.array([[2,-3,0],[2,-5,0],[0,0,3]])
6 values,vector=np.linalg.eig(a)
7 print("Eigen values are {} and Eigen Vectors are {}".format(values,vector))
```

	Expected	Got
✓	Eigen values are [1. -4. 3.] and Eigen Vectors are [[0.9486833 0.4472136 0.] [0.31622777 0.89442719 0.] [0. 0. 1.]]	Eigen values are [1. -4. 3.] [0.31622777 0.89442719 0.] [0. 0. 1.]

Passed all tests! ✓

Result:

Thus the Eigenvalue and Eigenvector is successfully solved using python program