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:

Step 1:

Import the numpy module to use the built-in functions for calculation

Step 2:

Prepare the lists from each linear equations 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 the program.

Program:

Program to find the eigen values and eigen vectors.

Developed by: JOTHIKRISHNAA V

RegisterNumber:212223100017

```
import numpy as np
A=np.array([[2,2],[1,3]])
values,vectors=np.linalg.eig(A)
print("Eigen values are {} and Eigen Vectors are {}".format(values,vectors))
```

Output:

```python
#Program to find the eigen values and eigen vectors.
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import numpy as np
A=np.array([[2,2],[1,3]])
values,vectors=np.linalg.eig(A)
print("Eigen values are {} and Eigen Vectors are {}".format(values,vectors))
```

	Expected	Got	
✔	Eigen values are [1. 4.] and Eigen Vectors are [[-0.89442719 -0.70710678] [0.4472136 -0.70710678]]	Eigen values are [1. 4.] and Eigen Vectors are [[-0.89442719 -0.70710678] [0.4472136 -0.70710678]]	✔

Passed all tests! ✔

Result:

Thus the Eigenvalue and Eigenvector is successfully solved using python program