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Task # 11

Statics_with_NumPy.py | Linear_Algebra_with_NumPy.py

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```python
import numpy as np

# Mean of an array
print("Mean")
arr = np.array([1, 2, 3, 4, 5])
mean = np.mean(arr)
print(mean)

# Mean of a matrix
mat = np.array([[1, 2], [3, 4], [5, 6]])
mean = np.mean(mat, axis=0)
print(mean)
print("----------------------------")

# Median of an array
print("Median")
arr = np.array([1, 2, 3, 4, 5])
median = np.median(arr)
print(median)

# Median of a matrix
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
3.0
[3. 4.]
----------------------------
Median
3.0
[3. 4.]
----------------------------
Mode
4
----------------------------
Quartiles
[2. 3. 4.]
----------------------------
Rank
2
----------------------------
Normal distribution
[ 1.57175876 -0.47116331  0.94164257 -0.58298688]
----------------------------
Standard Deviation
1.4142135623730951
----------------------------
correlation coefficient between two arrays
[[1. 1.]
 [1. 1.]]
```

Statics_with_NumPy.py | Linear_Algebra_with_NumPy.py

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```python
import numpy as np

# 2x2 matrix
print("matrix")
A = np.array([[1, 2], [3, 4]])
print(A)
print("-------------------------")

# determinant of A
print("Determinant of matrix")
det = np.linalg.det(A)
print(det)
print("-----------------------")

# inverse of A
print("Inverse of matrix")
inv = np.linalg.inv(A)
print(inv)
print("-----------------------")

# eigenvalues and eigenvectors of A
print("Eiganvalues and Eigenvectoes of matrix")
eigvals, eigvecs = np.linalg.eig(A)
print("Eigan vales:", eigvals)
print("Eigan vectors:", eigvecs)

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
[Running] python -u "e:\Bytewise Fellowship\Task_11\code_files\Linear_Algebra_with_NumPy.py"
matrix
[[1 2]
 [3 4]]
-------------------------
Determinant of matrix
-2.000000000000004
-----------------------
Inverse of matrix
[[-2.   1. ]
 [ 1.5 -0.5]]
-----------------------
Eiganvalues and Eigenvectoes of matrix
Eigan vales: [-0.37228132  5.37228132]
Eigan vectors: [[-0.82456484 -0.41597356]
 [ 0.56576746 -0.90937671]]

[Done] exited with code=0 in 0.306 seconds
```