

practical_5

February 13, 2024

Use command to compute the size of a matrix, size/length of a particular row/column, load data from a text file, store matrix data to a text file, finding out variables and their features in the current scope.

SIZE OF A MATRIX

```
[2]: import numpy as np
# Create a matrix
matrix = np.array([[1,2,3], [4,5,6], [7,8,9]])
# Compute the size of the matrix
size = matrix.size
print("Size of the matrix: ",size)
```

Size of the matrix: 9

The length of a particular row/column

```
[4]: import numpy as np
# Compute the length of the first row
row_length = len(matrix[0])
#Compute the length of the second column
column_length = len(matrix[:,1])
print("Length of the first row: ", row_length)
print("Length of the second column: ", column_length)
```

Length of the first row: 3

Length of the second column: 3

Load data from a text file

```
[26]: import pandas as pd

file_path = 'D:\JUPYTER NOTEBOOK\data.txt'
data = pd.read_csv(file_path, sep='\t', header=None) # Change separator if
↪necessary
print(data)
```

0
0 [[1,2,3],[4,5,6],[5,6,6]]

<>:3: SyntaxWarning: invalid escape sequence '\J'

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C:\Users\Pc\AppData\Local\Temp\ipykernel_1436\2456413935.py:3: SyntaxWarning:
invalid escape sequence '\J'
file_path = 'D:\JUPYTER NOTEBOOK\data.txt'

```
[22]: import numpy as np

# Create a matrix
matrix = np.array([[1, 2, 3], [4, 5, 6], [7, 8, 9]])

# Store matrix data to a text file
np.savetxt('matrix.txt', matrix)

print("Matrix data stored to 'matrix.txt'")
```

Matrix data stored to 'matrix.txt'

Finding out variables and their features in the current scope

```
[27]: import numpy as np

# Define variables
a = 1
b = "hello"
c = [1, 2, 3]

# Get variables and their features in the current scope
variables = dir()

print("Variables in the current scope:", variables)
```

Variables in the current scope: ['In', 'Out', '_', '__', '___', '__builtin__',
'__builtins__', '__doc__', '__loader__', '__name__', '__package__',
'__session__', '__spec__', '_dh', '_i', '_i1', '_i10', '_i11', '_i12', '_i13',
'_i14', '_i15', '_i16', '_i17', '_i18', '_i19', '_i2', '_i20', '_i21', '_i22',
'_i23', '_i24', '_i25', '_i26', '_i27', '_i3', '_i4', '_i5', '_i6', '_i7',
'_i8', '_i9', '_ih', '_ii', '_iii', '_oh', 'a', 'b', 'c', 'column_length',
'data', 'exit', 'file_path', 'get_ipython', 'matrix', 'np', 'open', 'pd',
'quit', 'row_length', 'size']

```
[ ]:
```