Practical 5

#Use command to compute the size /length of 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 .

```
import numpy as np

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


# Compute the length of a particular row

row_index = 1

row_length = len(matrix[row_index])

print(f"Length of row {row_index + 1}: {row_length}")


# Compute the length of a particular column (e.g., column 2)

col_index = 2

col_length = len(matrix[:, col_index])

print(f"Length of column {col_index + 1}: {col_length}")
```

```
Length of row 2: 3
Length of column 3: 3
```

```
data = np.loadtxt('data.txt')
```

```
var1 = 10
```

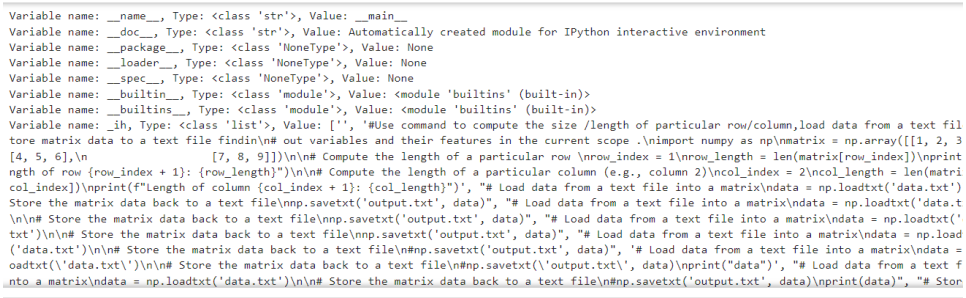
```
var2 = 'hello'

var3 = [1, 2, 3]

current_scope = locals().copy()

for var_name, var_value in current_scope.items():

    print(f"Variable name: {var_name}, Type: {type(var_value)}, Value: {var_value}")
```



```
Variable name: __name__, Type: <class 'str'>, Value: __main__
Variable name: __doc__, Type: <class 'str'>, Value: Automatically created module for IPython interactive environment
Variable name: __package__, Type: <class 'NoneType'>, Value: None
Variable name: __loader__, Type: <class 'NoneType'>, Value: None
Variable name: __spec__, Type: <class 'NoneType'>, Value: None
Variable name: __builtin__, Type: <class 'module'>, Value: <module 'builtins' (built-in)>
Variable name: __builtins__, Type: <class 'module'>, Value: <module 'builtins' (built-in)>
Variable name: _ih, Type: <class 'list'>, Value: ['', '#Use command to compute the size /length of particular row/column,load data from a text fil
tore matrix data to a text file findin\n# out variables and their features in the current scope .\nimport numpy as np\nmatrix = np.array([[1, 2, 3
[4, 5, 6],\n                   [7, 8, 9]])\n\n# Compute the length of a particular row \nrow_index = 1\nrow_length = len(matrix[row_index])\nprint
ngth of row {row_index + 1}: {row_length}")\n\n# Compute the length of a particular column (e.g., column 2)\ncol_index = 2\ncol_length = len(matri
col_index])\nprint(f"Length of column {col_index + 1}: {col_length}")', "# Load data from a text file into a matrix\ndata = np.loadtxt('data.txt')
Store the matrix data back to a text file\nnp.savetxt('output.txt', data)", "# Load data from a text file into a matrix\ndata = np.loadtxt('data.t
\n\n# Store the matrix data back to a text file\nnp.savetxt('output.txt', data)", "# Load data from a text file into a matrix\ndata = np.loadtxt('
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nto a matrix\ndata = np.loadtxt('data.txt')\n\n# Store the matrix data back to a text file\n#np.savetxt('output.txt', data)\nprint(data)", "# Stor
```