UNIVERSITY INSTITUTE of COMPUTING
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NAAC GRADE A+ ACCREDITED UNIVERSITY

Experiment 2.1

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Branch: CC-DEVOPS **Section/Group : 1/B**

Semester: 1 **Date of Performance: 18/NOV/2022**

Subject Name : Python Programming **Subject Code: 22CAH645**

1) **Task to be done: Write an experiment to swap two columns in numpy araray.**

Steps for experiment/practical:

Unit_2 > SwapColumn.py > ...

```python
# Experiment: 2.1.1
# Description: Write an experiment to swap two columns in numpy araray.

# Gaurav Kumar 22MCC20177
# Date: 2022-11-18

# Importing Module
import numpy as np


# Creating array with(4,3)
my_array = np.arange(12).reshape(4, 3)
print("Original Array : ")
print(my_array)

# creating function for swap
def Swap(arr, start_index, last_index):
    arr[:, [start_index, last_index]] = arr[:, [last_index, start_index]]

# passing parameter into the function
Swap(my_array, 0, 1)
print(" After Swapping :")
print(my_array)
```

Output (screenshots):

```
PS D:\Gaurav\MCA\Sem-1\Python> python .\Unit_2\SwapColumn.py
Original Array :
[[ 0  1  2]
 [ 3  4  5]
 [ 6  7  8]
 [ 9 10 11]]
 After Swapping :
[[ 1  0  2]
 [ 4  3  5]
 [ 7  6  8]
 [10  9 11]]
PS D:\Gaurav\MCA\Sem-1\Python>
```

2) **Task to be done: Write an experiment import a dataset with numbers and texts keeping the text intact in python numpy?**

Steps for experiment/practical:

```
Unit_2 > ImortDataSet.py > {} np
  1   # Experiment: 2.1.2
  2   # Description: Write an experiment to swap two columns in numpy araray.
  3
  4   # Gaurav Kumar 22MCC20177
  5   # Date: 2022-11-18
  6
  7   Importing Module
  8   import numpy as np
  9
 10   url = 'https://archive.ics.uci.edu/ml/machine-learning-databases/iris/iris.data'
 11   iris = np.genfromtxt(url, delimiter=',', dtype='object')
 12   names = ('sepallength', 'sepalwidth', 'petallength', 'petalwidth', 'species')
 13   print(iris)
```

Output (screenshots)

```
PS D:\Gaurav\MCA\Sem-1\Python> python .\Unit_2\ImortDataSet.py
 [[b'5.1' b'3.5' b'1.4' b'0.2' b'Iris-setosa']
  [b'4.9' b'3.0' b'1.4' b'0.2' b'Iris-setosa']
  [b'4.7' b'3.2' b'1.3' b'0.2' b'Iris-setosa']
  [b'4.6' b'3.1' b'1.5' b'0.2' b'Iris-setosa']
  [b'5.0' b'3.6' b'1.4' b'0.2' b'Iris-setosa']]
PS D:\Gaurav\MCA\Sem-1\Python>
```

4) Learning outcomes (What I have learnt): Times new roman 12 size

1. **Learn about Numpy.**
2. **Learn about swapping and slicing.**
3. **Learn about how to use csv in numpy.**

Evaluation Grid:

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Demonstration and Performance (Quiz)		22
2.	Worksheet		8