NATIONAL UNIVERSITY OF MODERN LANGUAGES

ISLAMABAD

Data Mining (LAB)

Lab Report - 04

Submitted to
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- **Calculate Euclidean & Supremum distance between Ali and Bilal.**

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from scipy.spatial.distance import euclidean

Name = ['Ali', 'Bilal', 'Ehdsan', 'Faris'],
Age = [20, 25, 20, 20],
Salary = [34, 25, 25, 25],
Grade = ['C', 'B', 'C', 'A']

NGrade = [3, 2, 3, 1]

set(NGrade)
n = len(set(NGrade))
#print(n)

# Convert NGrade list into common range[0,1] formula is (rank-1)/(total_ranks-1)
NGrade = [(x-1)/(n-1) for x in NGrade]
print(NGrade)

# Calculate Euclidean distance between Ali and Bilal
Ali = [20, 34, NGrade[0]]
Bilal = [25, 25, NGrade[1]]
dist = euclidean(Ali, Bilal)
print(dist)

# Calculate supremum distance between Ali and Bilal
dist = max(abs(a-b) for a,b in zip(Ali, Bilal))
print(dist)
```

✓ 0.0s

```
[1.0, 0.5, 1.0, 0.0]
10.307764064044152
9
```