Name – Pratik Rajesh Jade

Roll no – A70

# Assignment 1

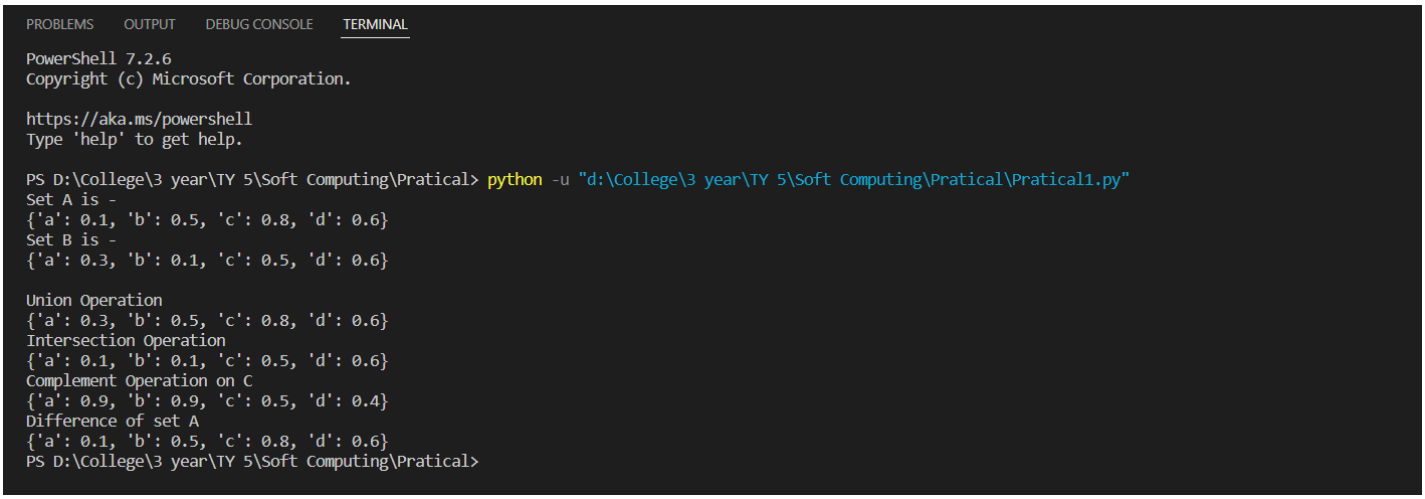
- Write a program to calculate union, Intersection, Complement and Difference operations on fuzzy sets

➢

```
A = {"a": 0.1, "b": 0.5, "c": 0.8, "d": 0.6}
B = {"a": 0.3, "b": 0.1, "c": 0.5, "d": 0.6}
C = {"a": 0.0, "b": 0.0, "c": 0.0, "d": 0.0}
print("Set A is - ")
print(A)
print("Set B is -")
print(B)
print()
print("Union Operation")
for i in A:
    # print(i)
    if (A[i] > B[i]):
        C[i] = A[i]
    else:
        C[i] = B[i]
print(C)


print("Intersection Operation")
for i in A:
    # print(i)
    if (A[i] < B[i]):
        C[i] = A[i]
    else:
        C[i] = B[i]
print(C)
print("Complement Operation on C")
for i in A:
    C[i] = round(1.0 - C[i], 2)
print(C)
print("Difference of set A")
for i in A:
    B[i] = round(1.0 - B[i], 2)
print(A)
```

## Output:


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PowerShell 7.2.6
Copyright (c) Microsoft Corporation.
https://aka.ms/powershell
Type 'help' to get help.
PS D:\College\3 year\TY 5\Soft Computing\Pratical> python -u "d:\College\3 year\TY 5\Soft Computing\Pratical\Pratical1.py"
Set A is -
{'a': 0.1, 'b': 0.5, 'c': 0.8, 'd': 0.6}
Set B is -
{'a': 0.3, 'b': 0.1, 'c': 0.5, 'd': 0.6}
Union Operation
{'a': 0.3, 'b': 0.5, 'c': 0.8, 'd': 0.6}
Intersection Operation
{'a': 0.1, 'b': 0.1, 'c': 0.5, 'd': 0.6}
Complement Operation on C
{'a': 0.9, 'b': 0.9, 'c': 0.5, 'd': 0.4}
Difference of set A
{'a': 0.1, 'b': 0.5, 'c': 0.8, 'd': 0.6}
PS D:\College\3 year\TY 5\Soft Computing\Pratical>

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# Assignment 2

- Write a program to calculate the De morgan's law

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```
A = {0,1,2,4,5,3,6,3,2,2,1,2,4,5,3,5,7,7,6,6};
B = {1,1,6,4,6,7,4,6,4,6,3,7};
#demorgans
print(not(A&B)==(not(A))or(not(B)))
```

Output:

```
PS D:\College\3 year\TY 5\Soft Computing\Pratical> python -u "d:\College\3 year\TY 5\Soft Computing\Pratical\Pratical2.py"
True
PS D:\College\3 year\TY 5\Soft Computing\Pratical>
```