Central Department

of

Computer Science and Information Technology

Tribhuvan University

Lab Report

on

Implementation of Defuzzification

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CODE

```
def enter(name):
    list={}
    n=int(input("Enter the number of elements in set"+name))
    for i in range(n):
        name=input("Enter the name: ")
        while 1:
            value=float(input("Enter the value: "))
            if(value>=0 and value<=1):
                list[name]=value
                break;
            else:
                print("Value must be >= 0 and <=1")
    return list


def Height(A):
    check=not bool(A)
    if(check==False):
        all_values = A.values()
        max_value = max(all_values)
        return max_value

def Max_membership(A):
    return( max(A, key= lambda x: A[x]))

def Mean_max(A):
    counter=0
    sum=0
    maxvalue=Height(A)
    for items in A:
        if(A[items]==maxvalue):
            sum=sum+int(items)
            counter=counter+1
    return round((sum/counter),2)


# A = {"10": 0.8, "20": 0.3, "30": 1.0}
A=enter(" for Max membership")
print("Given fuzzy Set:",A)
print("The defuzzified value from given fuzzy set using Max membership method
is:",Max_membership(A))
print("-----------------------------------------------------------------")
# A = {"10": 0.8, "20": 0.3, "31": 1.0, "40": 1.0}
A=enter(" for Mean max membership")
print("Given fuzzy Set:",A)
print("The defuzzified value from given fuzzy set using Mean Max membership
method is:",Mean_max(A))
```

```
OUTPUT
Enter the number of elements in set for Max membership5
Enter the name: 10
Enter the value: 0.3
Enter the name: 20
Enter the value: 0.5
Enter the name: 30
Enter the value: 0.2
Enter the name: 40
Enter the value: 0.67
Enter the name: 25
Enter the value: 0.88
Given fuzzy Set: {'10': 0.3, '20': 0.5, '30': 0.2, '40': 0.67, '25': 0.88}
The defuzzified value from given fuzzy set using Max membership method is:
25
----------------------------------------------------------------
Enter the number of elements in set for Mean max membership5
Enter the name: 23
Enter the value: 0.4
Enter the name: 56
Enter the value: 0.6
Enter the name: 65
Enter the value: 0.6
Enter the name: 40
Enter the value: 0.5
Enter the name: 30
Enter the value: 0.45
Given fuzzy Set: {'23': 0.4, '56': 0.6, '65': 0.6, '40': 0.5, '30': 0.45}
The defuzzified value from given fuzzy set using Mean Max membership metho
d is: 60.5
```