**AIM:** Write a program to implement fuzzy set operations

**SOURCE CODE:**

**Union**

A = dict()

B = dict()

Y = dict()

A = {"a": 0.2, "b": 0.3, "c": 0.6, "d": 0.6}

B = {"a": 0.9, "b": 0.9, "c": 0.4, "d": 0.5}

print('The First Fuzzy Set is :', A)

print('The Second Fuzzy Set is :', B)

for A\_key, B\_key in zip(A, B):

    A\_value = A[A\_key]

    B\_value = B[B\_key]

    if A\_value > B\_value:

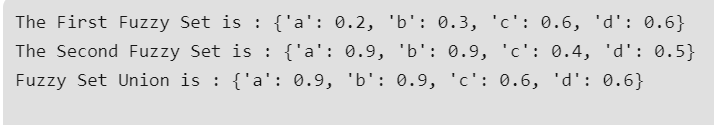
        Y[A\_key] = A\_value

    else:

        Y[B\_key] = B\_value

print('Fuzzy Set Union is :', Y)

**OUTPUT:**

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**Intersection**

A = dict()

B = dict()

Y = dict()

A = {"a": 0.2, "b": 0.3, "c": 0.6, "d": 0.6}

B = {"a": 0.9, "b": 0.9, "c": 0.4, "d": 0.5}

print('The First Fuzzy Set is :', A)

print('The Second Fuzzy Set is :', B)

for A\_key, B\_key in zip(A, B):

    A\_value = A[A\_key]

    B\_value = B[B\_key]

    if A\_value < B\_value:

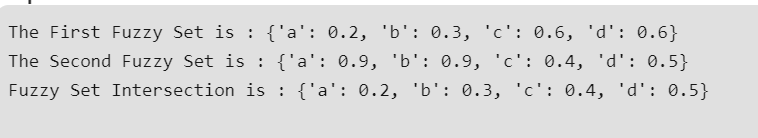
        Y[A\_key] = A\_value

    else:

        Y[B\_key] = B\_value

print('Fuzzy Set Intersection is :', Y)

**OUTPUT:**

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**Compliment**

A = dict()

Y = dict()

A = {"a": 0.2, "b": 0.3, "c": 0.6, "d": 0.6}

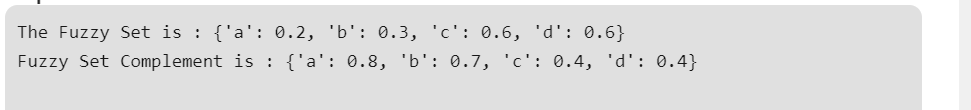
print('The Fuzzy Set is :', A)

for A\_key in A:

   Y[A\_key]= 1-A[A\_key]

print('Fuzzy Set Complement is :', Y)

**OUTPUT:**

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**Difference**

A = dict()

B = dict()

Y = dict()

A = {"a": 0.2, "b": 0.3, "c": 0.6, "d": 0.6}

B = {"a": 0.9, "b": 0.9, "c": 0.4, "d": 0.5}

print('The First Fuzzy Set is :', A)

print('The Second Fuzzy Set is :', B)

for A\_key, B\_key in zip(A, B):

    A\_value = A[A\_key]

    B\_value = B[B\_key]

    B\_value = 1 - B\_value

    if A\_value < B\_value:

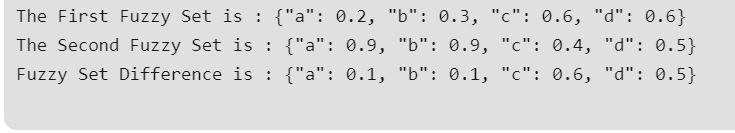
        Y[A\_key] = A\_value

    else:

        Y[B\_key] = B\_value

print('Fuzzy Set Difference is :', Y)

**OUTPUT:**

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