Title: Implementation of uncertain methods of an application.

Ex. No.:06 **Reg. No.: RA2011003011334**

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Aim:

Implementation of uncertain methods of abn application (fuzzy logic/Dempster Shafer Theory.

DFS Program:

```
from pyds import MassFunction, powerset

m1 = MassFunction({'a':0.4, 'b':0.2, 'ab':0.1, 'abc':0.3})
m2 = MassFunction({'b':0.5, 'c':0.2, 'ac':0.3, 'a':0.0})
print("m1:",m1)
print("m1: bpa of {'a','b'}=", m1['ab'])
print("m1: belief of {'a','b'}=", m1.bel('ab'))
print("m1: plausibility of {'a','b'}=", m1.pl('ab'))
print("m1: commonality of {'a','b'}=", m1.q('ab'))
print("m2:",m2)
print("m2: bpa of {'b'}=", m2['b'])
print("m2: belief of {'b'}=", m2.bel('b'))
print("m2: plausibility of {'b'}=", m2.pl('b'))
print("m2: commonality of {'b'}=", m2.q('b'))
```

Output:

```
from pyds import MassFunction, powerset

m1 = MassFunction({'a':0.4, 'b':0.2, 'ab':0.1, 'abc':0.3})
m2 = MassFunction({'b':0.5, 'c':0.2, 'ac':0.3, 'a':0.0})
print("m1:",m1)
print("m1: bpa of {'a','b'}=", m1['ab'])
print("m1: belief of {'a','b'}=", m1.bel('ab'))
print("m1: plausibility of {'a','b'}=", m1.pl('ab'))
print("m1: commonality of {'a','b'}=", m1.q('ab'))
print("m2:",m2)
print("m2: bpa of {'b'}=", m2['b'])
print("m2: belief of {'b'}=", m2.bel('b'))
print("m2: plausibility of {'b'}=", m2.pl('b'))
print("m2: commonality of {'b'}=", m2.q('b'))
```

The results are,

```
m1: { {'a'}:0.4; {'c', 'a', 'b'}:0.3; {'b'}:0.2; {'a', 'b'}:0.1 }
m1: bpa of {'a','b'}= 0.1
m1: belief of {'a','b'}= 0.7000000000000001
m1: plausibility of {'a','b'}= 1.0
m1: commonality of {'a','b'}= 0.4
m2: { {'b'}:0.5; {'c', 'a'}:0.3; {'c'}:0.2; {'a'}:0.0 }
m2: bpa of {'b'}= 0.5
m2: belief of {'b'}= 0.5
m2: plausibility of {'b'}= 0.5
m2: commonality of {'b'}= 0.5
```

Result:

Successfully DFS and A* Algorithm .