Expt 9

Implementation of uncertain method (Dempster Shafer theory)

Aim:- Implementation of uncertain method (Dempster Shafer Theory)

Problem Formulation:-

To solve inference problem representing uncertain method to obtain a belief function.

Using the mass function which has built in combination rule to obtain the dempster rule of combination

Initial State:-

m1 = {'a': 0.4, 'b': 0.2, 'ab': 0.1, 'bc': 0.3}

m2 = {'b': 0.6, 'c': 0.2, 'ac': 0.3, 'a': 0.9}

Final State:-

{'ac': 0.1078294, 'c': 0.10820, 'b': 0.5823...}

Problem Solving:-

The combination is calculated from the two sets of masses m_1 and m_2 in the following manner:

$\therefore m_{1,2}(\phi) = 0$

$\therefore m_{1,2}(A) = (m_1 \oplus m_2)(A) = \frac{1}{1-K} \sum_{B \cap C = A} m_1(B)$