Lab Assignment Fuzzy

1. Write Python program to implement Union, Intersection, Complement and Difference operations, De-morgan's Law on fuzzy sets. Also create fuzzy relation by Cartesian product of any two fuzzy sets and perform max-min composition on any two fuzzy relations.

2. Plot all the typical membership functions triangular, trapezoidal, and Gaussian.

3. Write a Python program to check whether a fuzzy set is normal.

4. Write a Python program to find the alpha-cut of a fuzzy set.

5. Write a Python program to check whether a fuzzy set is a singleton or not.

6. Write a Python program to check the convexity of a fuzzy set.

7. Implement De-fuzzification methods by taking user input

a) Maxima method

b) Centroid method

c) Weighted average