Trustworthy Artificial Intelligence
Assignment I : Introduction

1. Write python code to simulate a graph of different properties as mentioned below. The number of nodes fixed is 50.
    a. Create a random graph based topology with the probability of the edge being 0.2, 0.5, 0.7, 0.9. There would therefore be four different graphs.
    b. Create a small world graph where the probability of an edge connection is 0.3,0.5,0.7. The number of nearest neighbours they are connected are 3,5,9,11, respectively.
    c. For each of these graphs created, find a)degree distribution, (b) clustering co-efficient, © edge density. Share some comments about each of this graph topology.
2. Consider any two datasets from this link (https://snap.stanford.edu/data/#socne)
    a. Create a graph for each of these datasets
    b. For each of these graphs created, find a)degree distribution, (b) clustering co-efficient, © edge density. Share some comments about each of this graph topology.
    c. Now, for every graph you have created, randomly delete p% of the nodes and its edges. How is your understanding of (2. b) change ?