Assumptions:

- We assume that the network topology is known by the base station beforehand
- We assume that the base station (sink) is an edge device and that it is capable of calculating and transmitting the routing information to each individual nodes
- We assume that there are 100 nodes in a field of 100m X100m
- We assume that each node has 10J initial energy
- We take speed of light (to calculate trans delay) as 3*10^8
- We assume that each node takes 100 nanoseconds to decode and send messages
- We assume that each node performs data aggregation so that the total packet size is always 2000bits
- We assume that in every round, the cluster head is changed and routing table is calculated again
- We assume that there are 2 energy cost operations
  1)RECIEVING : receiving a 2000 bit information packet costs .0001 J
  2)SENDING : sending a 2000 bit packet costs .0001 J/M^2

so the total energy loss during a round for a single node = .
0001*NUM_OF_SENDERS_TO_NODE + .0001*(DISTANCE_BETWEEN_NODES)^2;

Assumptions for topology calculation time :

- The total time taken by a computer to create the tree structure is taken as topology calculation time

Assumptions for complete simulation time :

- The total time taken by a computer to finish the simulation is taken as complete simulation time

Assumptions for ROUNDS :

- Using the energy loss model, the energy for each node is calculated after every round
- After every round the tree structure is remade
- The rounds are carried out for 90% ,80% ,70% ,60%, 50%, 40%, 30%, 20%, 10% nodes being alive
- Once 10%nodes are dead the simulation stops

Assumptions for MESSAGE TIME DELAY :

- The time taken for a message to reach the head node from the farthest node possible
- The time for message travel in air @ speed of light is added
- The time taken at each node for processing is added
- A DJIKSTRA graph is created with edge weights DIST[I][J]/speed_of_light + TRANS_CALC_DELAY
- TRANS CALC DELAY is taken as 100 ns

Assumptions for energy per round :

- The energy consumed in each round is calculated using the loss model
- It is added up and averaged over number of rounds

Assumptions for NODE_LOSS :

- x percent of nodes are removed and energy per round is calculated

Assumptions for memory :

- Program run through online compiler (hackereaarth) and memory is noted