Project 2 : Milestone 1
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Milestone 1
Produce pseudo code versions of algorithms needed to construct:

a. A temperature schedule.
- Considering the Temperature as a function
- Initialize,
  1. To as the initial temperature
  2. K is the iteration value
  3. Alpha is the constant value which set nearer to 1 (Eg: 0.99 approx).
  4. Tk as the temperature at K.
- Function, $T_k = \alpha\ k\ T0$.
- Return, the multiplication value of the Current iteration value is returned.

b. A nearest neighbor of an already existing solution (i.e., the nearest neighbor of the solution in the previous iteration).
- Considering the Nearest Neighbor as a function
- Initialize,
  1. G as the source point / Current point as the initial temperature
  2. Nearest point / Next point Gp.
- Calculate the distance between G and Gp.
- Check if the Gp is the destination.
  1. Return destination found
  2. Return the nearest point.
- Function, D = NearestNeighbor(G, Gp)
- Return, the shortest distance between the 2 points in the graph.

c. A VALUE function that evaluates the quality of a solution.
- Considering the Value as a function
- Initialize,
  1. V = 0, as the Initial flow value is 0.
- Update 'V' Value as from incoming point flow value.
- Function, sum all the inflow value and update the V, Value(G,capacity)
- Return, the Value 'V' is returned which displays the maximum flow.

d. A function SA that drives the annealing process and calls functions that you specified in parts a), b) and c) above.
- Considering the SA as a function
- Initialize,
  1. G as the source point
  2. Initial_temp = 0
  3. Final_temp = 1
  4. Current Node = S
  5. Destination Node = D
  6. Alpha value = 0.99
  7. K = 1
- Iterate,
  1. For Each value of i (range (intial_temp to Final_temp)
     A. Find the NearestNeighbor(G,Gp) # The Source Node and the Next Node.
     B. Calculate the DeltaE Value, difference between the current Node and the New state Node.
        - If the DeltaE value > 0 , Assign the New state as the existing State # updates the Nodes.
        - - Else if DeltaE <= 0 and probability of ($e^{deltaE/T}$) > 90%, Assign the New state as the exiting state.
        - Else, Assign the current Node as the updated Node.
     C. Update the Temperature (K, Alpha, To) # updates the temp value
- Function, sol = SA (G, Source, Destination, Alpha, Intial_temp,Final_temp).
- Return, the solution of the max flow observed in the entire process from the source to destination.