Project 2, Milestone 1

Team members :

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Pseudo code versions of algorithms:

a) A temperature schedule:

- Initialize, while taking the Temperature as a function.
- Set the starting temperature T0.
- The iteration value is K.
- The constant value set closer to 1 or ~0.99 is called alpha.
- The temperature at K is Tk. The formula Tk = alpha* k T0.
- Return the result of multiplying the current iteration's value.

b) A nearest neighbor of an already existing solution (i.e., the nearest neighbor of the solution in the previous iteration)

- Taking the Nearest Neighbor into Account as a Function
- Establish, N as the initial temperature and the current point as the source point, Next or closest point N'.
- Determine the distance between points N and N'.
- Verify that the N' is the intended destination point.
  - If found Returning location as identified else Go back to the closest location.
- The shortest distance between the two points on the graph will be returned by the function D = NearestNeighbor(N, N').

c) A VALUE function that evaluates the quality of a solution.

- Taking the Value into Account as a Function
- Initialize with 'v' equal to 0, so the initial flow value is 0, v=0.
- Change the value of 'v' to reflect the incoming point flow value.
- The function returns the Value 'v', which represents the maximum flow, after adding up all the inflow values and updating the v, Value(N ,capacity).

d) A function SA that drives the annealing process and calls functions that you specified in parts a), b) and c) above.

- Initialize S as the source point.
- Initial temp = 0.
- Final temp = 1,
- S is the current node.
- D is the destination node
- Alpha value is 0.9 and K = 1,
- For Each value of i (range(intial_temp , Final_temp)):
  - Find the D = NearestNeighbor(N, N')
  - Determine the DeltaE Value, which is the difference between the present node and the next node.
    - If the DeltaE value > 0, the Nodes are updated by assigning the new state to the current State.
    - elseIf (DeltaE /T) > 90% and DeltaE = 0 then the new state should be assigned as the exiting state otherwise.
    - Else, The current node should be designated as the updated node.
  - Update the Temperature ,updates the temperature value (K, Alpha, T0)
- Function soln = SA (S, Source, Destination, Alpha, Initial_temp, Final_Temp).
- Return, the answer to the maximum flow that was seen during the whole source-to-destination process.