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Question5:

Suppose weight(i,j) as the path weight between i and j, i and j must be [interconnect](C:/Users/Olson/AppData/Local/youdao/dict/Application/8.9.6.0/resultui/html/index.html" \l "/javascript:;).

Let Max\_total(i,j,L) be the largest weight from i to j using exactly L steps

I,j could be any point in G and i could equals to j, 0<= L <=k

Base case:

weight (i,i) = 0

Max\_total(i,i,0) = 0

Max\_total(i,j,1) = weight(i,j) , i and j must be [interconnect](C:/Users/Olson/AppData/Local/youdao/dict/Application/8.9.6.0/resultui/html/index.html" \l "/javascript:;)

Recursively,

Max\_total(i,j,L) can be represent as

Max( Max\_total(i,J,L-1)+weight(J,j) for all J that linked to j )

The maximum total weight from point i to point j in exactly k steps will be

Max\_total(i,j,k)

This will takes O(V^3k)