DAA Assignment 3

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1 Ski

- In this problem we first notice that doing a DFS from point a will result in the maximum path from point a.
- However if we do DFS from each and every point we will repeat many paths multiple times.
- So we just store the value of DFS after applying each time.
- So this will result in each cell appearing only once in some DFS.

2 Symmetry Makes Perfect

- If we try to solve the easier form of question which is "Number of additions to make a string a plaindrome". We will get this problem also.
- So there are 3 cases for a substring $s[l..r]$ where l and r are indexes.
- if $s[l] == s[r]$ then $ans(s[l..r] = ans(s[l+1..r-1])$
- If not then 2 cases arise
- $cost(s[l]) + ans(s[l+1..r])$ and $cost(s[r]) + ans(s[l..r-1])$
- We can see this formulation has the properties of optimal substructure and overlapping problems. Hence a DP solution.
- Base case is when $l + 1 >= r - 1$

3 Giridiron Gauntlet