

72. Edit Distance

Basic DP Question

Operations allowed

- insert a char
- del a char
- replace a char

Goal: make $str1 == str2$

$dp(i)(j) \rightarrow$ make cost to make strings
 $str1(1..i)$ $str2(1..j)$ equal.

if $str1(i) == str2(j)$

$$dp(i)(j) = \min \left(\begin{array}{l} dp(i-1)(j-1) \\ 1 + dp(i-1)(j) \\ 1 + dp(i)(j-1) \end{array} \right)$$

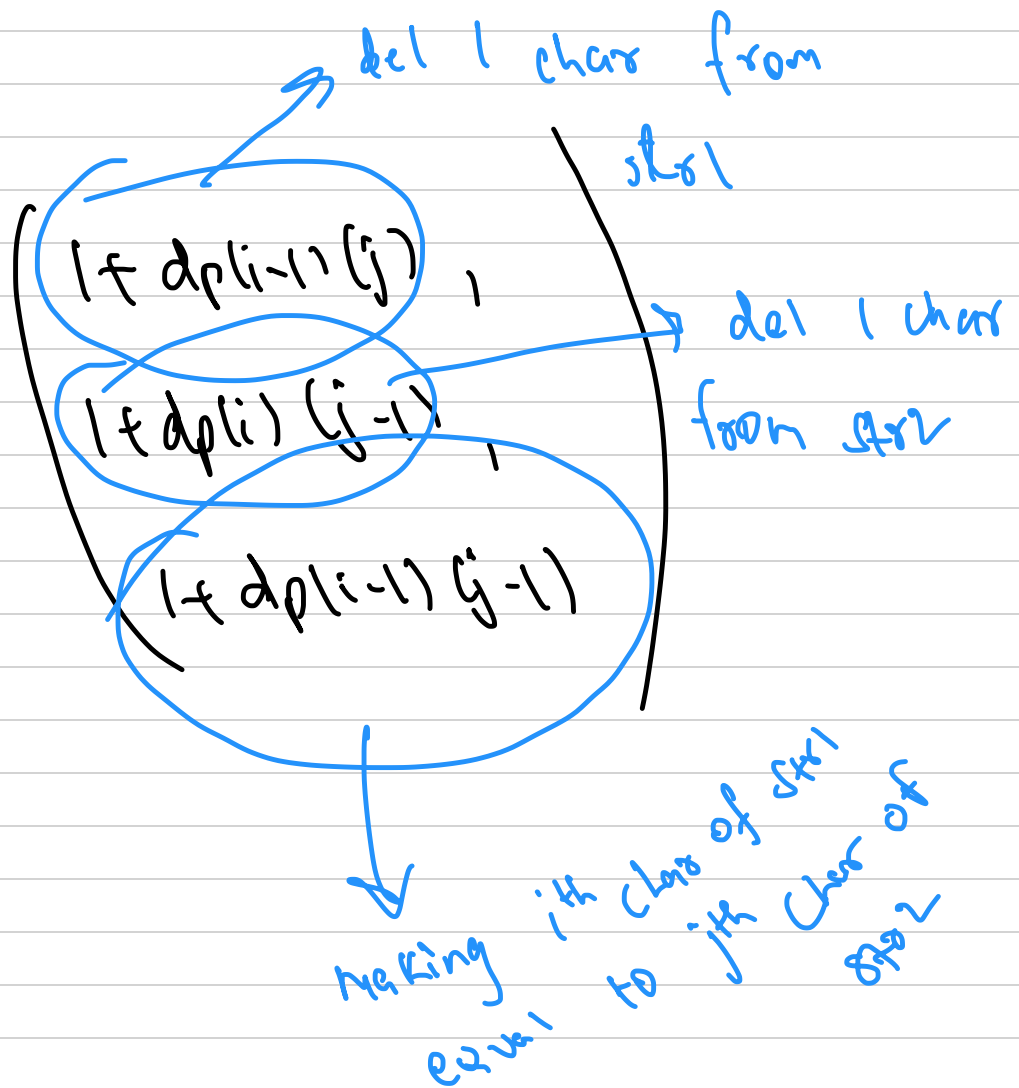
as $str1(i) = str2(j)$

removing
1 char from
 $str1$

removing 1 char from $str2$

else :

$d[i][j] = \min$



for x in range(len(str1)):

for y in range(len(str2)):

use rec formula ①

Time Complexity : $O(n^2)$

Space Complexity : $O(n^2)$