

### Problem 1

Overlapping subproblems like the recursive Fibonacci tend to solve the same problem over and over leading to redundant computations. Whereas the Binary search algorithm searches through one half at a time and the results of one half don't affect the previous or the next recursive call.

### Problem 2

2. Consider the following instance of the Edit Distance problem:  $\text{EditDistance}(\text{"maple"}, \text{"kale"})$ . Taking the iterative dynamic programming approach to solve this problem, fill out the values in the table.

D	""	"k"	"ka"	"kal"	"kale"
""	0	1	2	3	4
"m"	1	1	2	3	4
"ma"	2	2	1	2	3
"map"	3	3	2	2	3
"mapl"	4	4	3	2	3
"maple"	5	5	4	3	2

3. (Interview Question) Devise a dynamic programming solution for the following problem:  
Given two strings, find the length of longest subsequence that they share in common.  
Different between substring and subsequence:  
Characters in a substring of S must occur contiguously in S.

### Problem 3

To be submitted

### Problem 4

Working on this!!