Homework06

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Problem 01

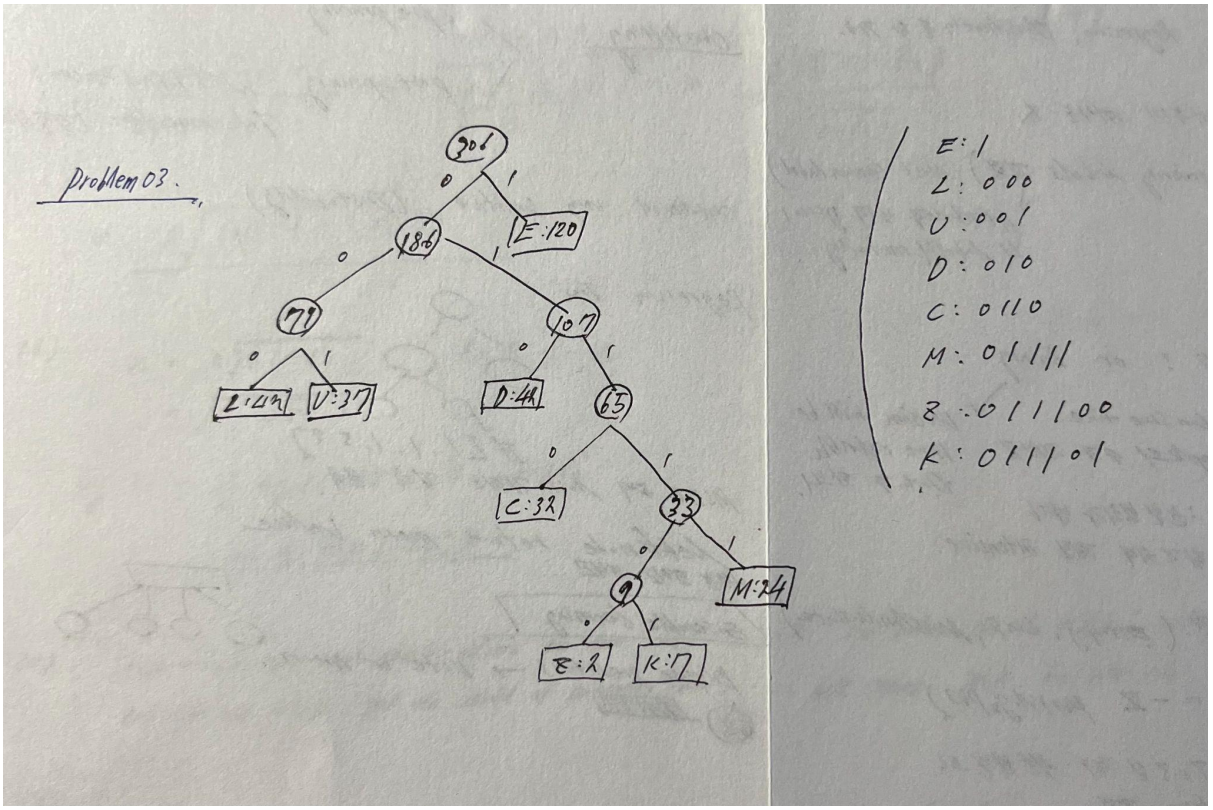
Method	***n=5***	***n=10***	***n=20***	***n=30***	***n=40***
Dynamic	0.000005sec	0.000025sec	0.000075sec	0.006878sec	0.562809sec
Recursive	0.000016sec	0.000007sec	0.000005sec	0.000004sec	0.000004sec

The time complexity of the dynamic programmed Fibonacci function is reduced to O(n). However, the recursive function has O(2^n) time complexity. By the number of iterations, we can figure out that the recursive approach takes much more time than the dynamic approach.

Problem 02

Rod Size	***Recursive Time***	***Recursive Max Revenue***	***Dynamic Time***	***Dynamic Max Revenue***
5	0.000006sec	10	0.000007sec	10
10	0.000013sec	22	0.000005sec	22
15	0.000320sec	35	0.000009sec	35
20	0.009648sec	47	0.000006sec	47
25	0.300781sec	60	0.000008sec	60
30	8.410763sec	72	0.000009sec	72
35	No solution	No solution	0.000011sec	85
40	No solution	No solution	0.000016sec	97
45	No solution	No solution	0.000016sec	110
50	No solution	No solution	0.000018sec	122

Problem 03


Problem 03.
300
0
1
186
E:120
0
1
79
107
0
1
0
1
L:009
V:37
D:44
65
0
1
C:32
33
0
1
9
M:24
0
1
Z:2
K:7
E:1
L:000
V:001
D:010
C:0110
M:01111
Z:011100
K:011101