

Motivation and guideline:

https://www.youtube.com/watch?v=WV5vI_p0L9Q&list=PLzVLIdlx9dQxwAN5mMkzdV8879j&index=2

Aditya Verma's [recursion](#) playlist is very efficient.

Aditya Verma's DP Playlist: <https://www.youtube.com/playlist?list=...> (Hindi)

Errichto Lectures:

1. <https://www.youtube.com/watch?v=YBSt1jYwVfU>
2. <https://www.youtube.com/watch?v=1mtvm2ubHCY>
3. <https://www.youtube.com/watch?v=KJWAQVmuFW0>

LCS blog: <https://www.programiz.com/dsa/longest-common-subsequence>

Edit Distance Blog: <https://www.techiedelight.com/levenshtein-distance-edit-distance-problem/>

LIS blog: https://cp-algorithms.com/sequences/longest_increasing_subsequence.html

Remember 3 things to solve DP:

1. States
2. Base case
3. Formula (recursive case)

- The base case doesn't always return 0(zero). There might be some conditions to returning zero/one otherwise returns the max/min value. (Realization from day 19th)
- For the “number of ways” problems, we need to sum the answer in the recursive case. (Day 22)
- On day 23rd I learned memory optimization. I saw a video in my native language(Bangla).
Link: <https://www.youtube.com/watch?v=GoV0Gm7iuWI&t=836s>
- On day 25th I learned to store the path of my recursive dp.
- On day 27th, I solved my first dp problem in a virtual contest. Hope the real contest goes up.
- On day 31st, I solved the first Dp problem in the contest.
- Sometimes it is better to memorize the dp array with max values or min values(day 32)
- On day 33 I thought not to use a condition while it was very important and impactful

Here are the links to the resources mentioned in the guideline video:

Hackerearth's 4 DP Tutorials:

<https://www.hackerearth.com/practice/...>

Codechef:

<https://www.codechef.com/cptutorials?...>

Codeforces DP Playlist:

<https://www.youtube.com/playlist?list...>

CSES: <https://cses.fi/problemset/>

ATCODER: <https://atcoder.jp/contests/dp>

USACO guide gold: <https://usaco.guide/gold/>

USACO guide platinum: <https://usaco.guide/plat/>

USACO guide advanced: <https://usaco.guide/adv>

Solved Problems:

Day	Problem link	Concept
1	After watching Errichto's first lecture: https://atcoder.jp/contests/dp/tasks/dp_a https://atcoder.jp/contests/dp/tasks/dp_b https://atcoder.jp/contests/dp/tasks/dp_c	Fibonacci
2-3	After watching Errichto's 2nd lecture: https://cses.fi/problemset/task/1633 https://cses.fi/problemset/task/1634 https://cses.fi/problemset/task/1635 https://cses.fi/problemset/task/1636	Coin Change Coin Combinations
4	After reading Kadane's algorithm: https://cses.fi/problemset/task/1643 After learning Hamim's Formula: https://codeforces.com/contest/1373/problem/D https://codeforces.com/contest/118/problem/D	
5	https://atcoder.jp/contests/abc220/tasks/abc220_d	2D Fibonacci
6	https://www.codechef.com/problems/TSOH	Kadane's algorithm
7-11	https://atcoder.jp/contests/dp/tasks/dp_d https://atcoder.jp/contests/dp/tasks/dp_e https://cses.fi/problemset/task/1158 https://cses.fi/problemset/task/1745 https://cses.fi/problemset/task/1093	Knapsack
12	https://codeforces.com/problemset/problem/106/C	Knapsack
13	https://codeforces.com/contest/730/problem/J	Knapsack
14-15	Errichto Lecture 3 and LCS blog: https://atcoder.jp/contests/dp/tasks/dp_f https://lightoj.com/problem/an-easy-lcs	Longest Common Subsequence

16	Edit distance blog(Recursive ideas sound cool): https://cses.fi/problemset/task/1639/ https://www.spoj.com/problems/MC/	Edit Distance
17	https://codeforces.com/contest/1324/problem/E	Coin change
18	https://codeforces.com/contest/358/problem/D https://codeforces.com/contest/225/problem/C	Knapsack
19	https://codeforces.com/contest/234/problem/F	Knapsack
20	https://codeforces.com/contest/67/problem/D	LIS
	https://codeforces.com/contest/214/problem/E	Recursion/Subproblem
21	https://lightoj.com/problem/pimp-my-ride	Bitmask Dp
22	https://lightoj.com/problem/divisible-group-sums	No of ways
23	https://codeforces.com/contest/1625/problem/C	Memory optimization
24	https://lightoj.com/problem/how-many-zeroes	Digit Dp
25	https://codeforces.com/contest/1624/problem/E	Dp and Backtrack
26	https://codeforces.com/contest/1633/problem/D	Knapsack
27	https://codeforces.com/contest/1207/problem/C	0/1 knapsack
28	https://codeforces.com/contest/909/problem/C	Iterative and prefix sum
29	https://codeforces.com/contest/1061/problem/C	Space and Time optimization
30	https://codeforces.com/contest/5/problem/C	DP, Greedy, Constructive
31	https://codeforces.com/contest/1681/problem/D	Shortest path dp
32	https://codeforces.com/gym/104059/problem/I	
33	https://atcoder.jp/contests/abc303/tasks/abc303_d	
34	https://www.codechef.com/problems/CS2023_404	IDEA