**Dynamic Programming**

**From where I am going to study and practice DP,**

* CLRS
* GFG
* ByteByByte pdf
* Interview bit
* Codechef
* Hackerrank
* YouTube videos
* DP notes

Note : - Here I am not going to write the whole theory and complete explanation. This repository is just for quick revision and to remind me what I have studied till now and provide the link of the original resource from where I have actually studied that topic. Therefore if I want to check the original resource then I can easily check that.

Note:- the order of this file is in that order in which I have studied them.

1. **Some Good Videos:**

* Live Webinar on Dynamic Programming | By Ankush Singla | Coding Ninjas

Link: <https://www.youtube.com/watch?v=rs6lZan3pIU&list=PL3D9ZmW9-bkutVtjBa6wbUr38NczKQZpg&index=28&t=0s>

# Live webinar on Dynamic programming [Hinglish] - by Prateek Narang, Coding Blocks

# Link: <https://www.youtube.com/watch?v=X7SrnbgqHHs&list=PL3D9ZmW9-bkutVtjBa6wbUr38NczKQZpg&index=26>

# Algorithms: Memoization and Dynamic Programming

# Link: <https://www.youtube.com/watch?v=P8Xa2BitN3I>

# Rod Cutting Problem from CLRS and variation

# Cutting a Rod dp-13

# TL: <https://www.geeksforgeeks.org/cutting-a-rod-dp-13/>

# Cutted segments

# PL: <https://practice.geeksforgeeks.org/problems/cutted-segments/0>

# Matrix Chain Multiplication | DP-8

# TL: <https://www.geeksforgeeks.org/matrix-chain-multiplication-dp-8/>

# PL: <https://practice.geeksforgeeks.org/problems/matrix-chain-multiplication/0>

# Pl: <https://codezen.codingninjas.in/practice/471/860/matrix-chain-multiplication>

# Min step to one

# PL: <https://codezen.codingninjas.in/practice/471/852/min-steps-to-one>

# Ways to make change(or coin change problem)

# PL: <https://codezen.codingninjas.in/practice/471/855/ways-to-make-coin-change>

# TL: <https://www.geeksforgeeks.org/coin-change-dp-7/>

# PL: <https://practice.geeksforgeeks.org/problems/coin-change/0>

# Longest common subsequence and printing it

# TL: <https://www.geeksforgeeks.org/longest-common-subsequence-dp-4/>

# TL: <https://www.geeksforgeeks.org/printing-longest-common-subsequence/>

# PL: <https://practice.geeksforgeeks.org/problems/longest-common-subsequence/0>

# PL: <https://codezen.codingninjas.in/practice/471/859/longest-common-subsequence>

# Stairs(number of ways)

# PL : <https://www.interviewbit.com/problems/stairs/>

# PL : <https://codezen.codingninjas.in/practice/471/846/staircase>

# Min Sum Path in Matrix

# PL : <https://www.interviewbit.com/problems/min-sum-path-in-matrix/>

# Min Sum Path in Triangle

# PL: <https://www.interviewbit.com/problems/min-sum-path-in-triangle/>

# LCS (Longest Common Subsequence) of three strings

# TL: <https://www.geeksforgeeks.org/lcs-longest-common-subsequence-three-strings/>

# PL: <https://practice.geeksforgeeks.org/problems/lcs-of-three-strings/0>

# Longest Increasing Subsequence

# TL: <https://www.geeksforgeeks.org/longest-increasing-subsequence-dp-3/>

# PL: <https://practice.geeksforgeeks.org/problems/longest-increasing-subsequence/0>

# PL : <https://www.interviewbit.com/problems/longest-increasing-subsequence/>

# Printing LIS

# TL: <https://www.geeksforgeeks.org/construction-of-longest-increasing-subsequence-using-dynamic-programming/>

# Great article : efficient LIS

# TL: <https://www.geeksforgeeks.org/longest-monotonically-increasing-subsequence-size-n-log-n/>

# TL: <https://www.geeksforgeeks.org/construction-of-longest-monotonically-increasing-subsequence-n-log-n/>

# Length of longest subsequence

# PL:<https://www.interviewbit.com/problems/length-of-longest-subsequence/>

# Max Sum Without Adjacent Elements

# PL: <https://www.interviewbit.com/problems/max-sum-without-adjacent-elements/>

# Maximum Sum Increasing Subsequence

# Same to lis

# TL: <https://www.geeksforgeeks.org/maximum-sum-increasing-subsequence-dp-14/>

# PL: <https://practice.geeksforgeeks.org/problems/maximum-sum-increasing-subsequence/0>

# Relative : <https://www.geeksforgeeks.org/maximum-product-increasing-subsequence/>

# Number of Unique Paths in a Grid

# PL : <https://www.interviewbit.com/problems/unique-paths-in-a-grid/>

# Longest Repeated Subsequence

# TL : <https://www.geeksforgeeks.org/longest-repeated-subsequence/>

# PL : <https://practice.geeksforgeeks.org/problems/longest-repeating-subsequence/0>

# PL: <https://www.interviewbit.com/problems/repeating-subsequence/>

# Edit Distance

# PL: <https://www.interviewbit.com/problems/edit-distance/>

# PL: <https://codezen.codingninjas.in/practice/471/858/edit-distance>

# Video:<https://www.youtube.com/watch?v=We3YDTzNXEk&list=PLrmLmBdmIlpsHaNTPP_jHHDx_os9ItYXr&index=6>

# Max Rectangle in Binary Matrix

# PL: <https://www.interviewbit.com/problems/max-rectangle-in-binary-matrix/>

# Distinct Subsequences(Number of ways to generate a particular subsequence)

# PL: <https://www.interviewbit.com/problems/distinct-subsequences/>

# Interleaving Strings

# PL : <https://www.interviewbit.com/problems/interleaving-strings/>

# Todo : Bottom Up

# Find number of times a string occurs as a subsequence in given string

# TL : <https://www.geeksforgeeks.org/find-number-times-string-occurs-given-string/>

# PL: <https://practice.geeksforgeeks.org/problems/find-number-of-times-a-string-occurs-as-a-subsequence/0>

# PL: <https://codezen.codingninjas.in/practice/471/523/count-ror>

# This problem is same as Problem 20 Distinct Sunsequence.