# ACM SUMMER CHALLENGE 2020 RECURSION AND BASIC DYNAMIC PROGRAMMING

# **Recursion and Backtracking Tutorial**

- https://www.hackerearth.com/practice/basic-programming/recursion/recursion-and-backtracking/tutorial/
- <a href="https://www.topcoder.com/community/competitive-programming/tutorials/an-introduction-to-recursion-part-1/">https://www.topcoder.com/community/competitive-programming/tutorials/an-introduction-to-recursion-part-1/</a>
- <a href="https://www.topcoder.com/community/competitive-programming/tutorials/an-introduction-to-recursion-part-2/">https://www.topcoder.com/community/competitive-programming/tutorials/an-introduction-to-recursion-part-2/</a>
- https://www.comp.nus.edu.sg/~stevenha/cs1020e/tutorials/T7 ans.pdf

## **Recursion and Backtracking Practice Problem**

- https://www.geeksforgeeks.org/backtracking-algorithms/
- <a href="https://www.hackerearth.com/practice/basic-programming/recursion/recursion-and-backtracking/practice-problems/algorithm/n-queensrecursion-tutorial/">https://www.hackerearth.com/practice/basic-programming/recursion/recursion-and-backtracking/practice-problems/algorithm/n-queensrecursion-tutorial/</a>

### **Basic Dynamic Programming**

- <a href="https://www.hackerearth.com/practice/algorithms/dynamic-programming/introduction-to-dynamic-programming-1/tutorial/">https://www.hackerearth.com/practice/algorithms/dynamic-programming/introduction-to-dynamic-programming-1/tutorial/</a> (one of the amazing article on DP)
- Tabulation vs memoization
- <a href="https://www.geeksforgeeks.org/optimal-substructure-property-in-dynamic-programming-dp-2/">https://www.geeksforgeeks.org/optimal-substructure-property-in-dynamic-programming-dp-2/</a>
- <a href="https://www.geeksforgeeks.org/overlapping-subproblems-property-in-dynamic-programming-dp-1/">https://www.geeksforgeeks.org/overlapping-subproblems-property-in-dynamic-programming-dp-1/</a>

### **Basic DP Practice Problem**

- https://www.geeksforgeeks.org/coin-change-dp-7/
- https://atcoder.jp/contests/dp/tasks/dp\_a
- https://atcoder.jp/contests/dp/tasks/dp\_b
- https://practice.geeksforgeeks.org/problems/0-1-knapsack-problem/0
- https://www.geeksforgeeks.org/dynamic-programming/#basicProblems