**📝 Infinite Champions Programme – Day 7 (Assignment Sheet)**

**📌 Instructions  
• Deadline: Submit your solutions by 4th October, 2025, EOD.  
• Platform: Test your solutions on LeetCode  
• Collaboration: Discussing concepts is encouraged, but all code must be your own.**

1. [**House Robber (198)**](https://leetcode.com/problems/house-robber/)  
   • Problem: You are a professional robber planning to rob houses along a street. Each house has some money, but adjacent houses cannot be robbed on the same night.  
   • Objective: Use dynamic programming to maximize the total amount of money robbed.  
   • YouTube Solution (Java): [House Robber – Java Solution](https://www.youtube.com/watch?v=73r3KWiEvyk)
2. [**Maximum Subarray (53)**](https://leetcode.com/problems/maximum-subarray/)  
   • Problem: Given an integer array nums, find the contiguous subarray with the largest sum.  
   • Objective: Apply Kadane’s algorithm (DP-based) to find the maximum subarray sum.  
   • YouTube Solution (Java): [Maximum Subarray – Java Solution](https://www.youtube.com/watch?v=5WZl3MMT0Eg)
3. [**Unique Paths (62)**](https://leetcode.com/problems/unique-paths/)  
   • Problem: A robot is at the top-left corner of an m x n grid. It can only move right or down. Find the number of unique paths to reach the bottom-right corner.  
   • Objective: Use dynamic programming with grid traversal to count possible paths.  
   • YouTube Solution (Java): [Unique Paths – Java Solution](https://www.youtube.com/watch?v=IlEsdxuD4lY)

**📚 Submission Checklist  
• Time and space complexity analysis for each solution.  
• Test cases demonstrating the correctness of your solutions.**