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Assignment 3 Question 3

Describe the top-down and bottom-up approaches to dynamic programming.

Top-down dynamic programming (memorization): Solving the problem recursively, then storing the results (memoize) to avoid redundancy, either in a table or a dictionary most often. The stored result is used directly in case the same subproblem needs to be solved again.

Bottom-up dynamic programming (tabulation): Solving the problem iteratively, starting with the smallest subproblems and concatenating their results. The concatenation is done by building a table to hold the results, then solving them all in order using the table.