Dynamic Programming

Dynamic Programming is a technique in computer programming that helps to efficiently **solve a class of problems that have overlapping subproblems**.

How Dynamic Programming Works

Dynamic programming **works by storing the result of subproblems** so that **when their solutions are required, they are at hand** and we do not need to recalculate them.

This **technique of storing the value of subproblems is called memoization**. By saving the values in the array, we save time for computations of sub-problems we have already come across.

Dynamic programming by **memoization** is a **top-down approach to dynamic programming**. By reversing the direction in which the algorithm works i.e. **by starting from the base case and working towards the solution**, we can also implement dynamic programming **in a bottom-up manner**.