

Dynamic programming Disposition

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1. Dynamic programming is used to solve optimization problem, by only solving the same problem one time.
2. Introduce rod cutting problem with exponential asymptotic runtime
3. Use Dynamic programming if optimization problem exhibit *Optimal substructure* and *overlapping sub-problems*. Explain and show on rod-cutting problem.
4. Explain why the bottom up approach for the rod cutting problem has $O(n^2)$ runtime.
5. Get into the differences between top-down and bottom-up approaches.