

Convert the given Brute force solutions into bottom-up (iterative/tabular) DP solution. Assume that all the arrays are globally available.

<p>Q#1: Coin Change(N, Amt) { if(N == 1) return C[N] if(Amt == 0) return 0 if(C[N] > Amt) return Coin Change (N-1, Amt) else return min(Coin Change(N-1, Amt), 1+Coin Change(N-1,Amt-C[N])) } }</p>	<p>Problem: Return the given amount with minimum number of coins. // (N) number of coins // (Amt) //amount to be returned.</p>
<p>Q#2: Coin Change (N, Amt){ if(N == 0) return C[N] if(Amt == 0) return 0 if(C[N] > Amt) return Coin Change(N-1, Amt) else return Coin Change(N-1, Amt) + Coin Change(N-1,Amt-C[N]) } }</p>	<p>Problem: Count all the possible ways to return the given amount. // (N) number of coins // (Amt) //amount to be returned.</p>
<p>Q#3: KSP(N,M){ if(N == 0) return 0 if(M == 0) return 0 if(W[N] > M) return KSP(N-1, M) else return max(KSP(N-1, M), V[N] + KSP(N-1,M-W[N])) } }</p>	<p>Problem: Maximize the profit by including those items in the knapsack having maximum value. // (N) number of items // (M) capacity of bag</p>
<p>Q#4: LCS(N,M){ if(N == 0) return 0 if(M == 0) return 0 if(s1[N] == s2[M]) return 1 + LCS(N-1, M-1) else return min(LCS(N-1, M),LCS(N,M-1)) } }</p>	<p>Problem: Return the length of longest common subsequence. // (N and M) represent the length of strings</p>

<p>Q#5:</p> <pre> ED(N,M){ if(N == 0) return M if(M == 0) return N if(s1[N] == s2[M]) return ED(N-1, M-1) else if(s1[N-1]==s2[M] AND s1[N]==s2[M-1]) return ED(N-2, M-2) else return 1+ min(ED(N, M-1), ED(N-1,M), ED(N-1,M-1)) } </pre>	<p>Problem:</p> <p>Convert one string into the other using minimum number of operations.</p> <p>// (N and M) represent the length of strings.</p>
<p>Q#6:</p> <pre> SSP(N,K) { if(N == 0) return 0 if(K == 0) return 1 if(A[N] > K) return SSP(N-1, K) else return SSP(N-1, K) SSP(N-1, K-A[N]) } </pre>	<p>Problem:</p> <p>Determine whether there exists any subset of array having sum equals to the target value.</p> <p>// (N) length of array // (K) target value</p>
<p>Q#7:</p> <pre> RC(N) { if(N==0) return 0 q = 0 for (i=1 to N) { q = max(q, RC(N-i) + Pr[i]) } return q } </pre>	<p>Problem:</p> <p>Rod of length N can be cut into different segments. Return the maximum profit that can be achieved.</p>