Lab-10

Group-2

Problem 1: (Knapsack)

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Algorithm Knapsack(w, v, W)
    input: w be the weights of items,
           v be the values of items,
           W be the capacity of knapsack

    output: maxvalue

n ← w.length
for (j ← 0 to W) do V[0, j] = 0;
for (i ← 1 to n) do
    for(j ← 0 to W) do
      if( w[i] ≤ j and (v[i] + V[i-1, j-w[i]] > V[i-1, j])) {
            V[i,j] = v[i] + V[i-1, j-w[i]];
            keep[i,j] = 1;
      }
      else {
            V[i,j] = V[i-1, j];
            keep[i,j] = 0;
      }
K ← W
for (i = n down to 1) do
      if (keep[i, K] = 1) {
          print i;
          K = K - w[i];
      }
return V[n, W];
```