**0 1 Knapsack**

int maxProfit(vector<int>& values, vector<int>& weights, int n, int w) {

vector<vector<int>> dp(n + 1, vector<int>(w + 1, 0));

for (int i = 1; i <= n; i++) {

for (int j = 1; j <= w; j++) {

if (weights[i - 1] <= j) {

dp[i][j] = max(dp[i - 1][j], values[i - 1] + dp[i - 1][j - weights[i - 1]]);

} else {

dp[i][j] = dp[i - 1][j];

}

}

}

return dp[n][w];

}