```
1  // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3  class Program {
4    // O(nk) time | O(nk) space
5    public static int maxProfitWithKTransactions(int[] prices, int k) {
6      if (prices.length == 0) {
7        return 0;
8      }
9      int[][] profits = new int[k + 1][prices.length];
10     for (int t = 1; t < k + 1; t++) {
11       int maxThusFar = Integer.MIN_VALUE;
12       for (int d = 1; d < prices.length; d++) {
13         maxThusFar = Math.max(maxThusFar, profits[t - 1][d - 1] - prices[d - 1]);
14         profits[t][d] = Math.max(profits[t][d - 1], maxThusFar + prices[d]);
15       }
16     }
17     return profits[k][prices.length - 1];
18   }
19 }
20
```