

Solution 1Solution 2

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1  # Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3  # O(nk) time | O(n) space
4  def maxProfitWithKTransactions(prices, k):
5      if not len(prices):
6          return 0
7      evenProfits = [0 for d in prices]
8      oddProfits = [0 for d in prices]
9      for t in range(1, k + 1):
10         maxThusFar = float("-inf")
11         if t % 2 == 1:
12             currentProfits = oddProfits
13             previousProfits = evenProfits
14         else:
15             currentProfits = evenProfits
16             previousProfits = oddProfits
17         for d in range(1, len(prices)):
18             maxThusFar = max(maxThusFar, previousProfits[d - 1] - prices[d - 1])
19             currentProfits[d] = max(currentProfits[d - 1], maxThusFar + prices[d])
20     return evenProfits[-1] if k % 2 == 0 else oddProfits[-1]
21
```

