

Maximum profit by buying and selling a share at most twice

In a daily share trading, a buyer buys shares in the morning and sells it on same day. If the trader is allowed to make at most 2 transactions in a day, where as second transaction can only start after first one is complete (Sell->buy->sell->buy). Given stock prices throughout day, find out maximum profit that a share trader could have made.

Examples:

Input: price[] = {10, 22, 5, 75, 65, 80}

Output: 87

Trader earns 87 as sum of 12 and 75

Buy at price 10, sell at 22, buy at 5 and sell at 80

Input: price[] = {2, 30, 15, 10, 8, 25, 80}

Output: 100

Trader earns 100 as sum of 28 and 72

Buy at price 2, sell at 30, buy at 8 and sell at 80

Input: price[] = {100, 30, 15, 10, 8, 25, 80};

Output: 72

Buy at price 8 and sell at 80.

Input: price[] = {90, 80, 70, 60, 50}

Output: 0

Not possible to earn.