**DAY 1 – DS Using C Programs**

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You are given an array of prices where prices[i] is the price of a given stock on an ith day.

You want to maximize your profit by choosing a single day to buy one stock and choosing a different day in the future to sell that stock.

Return the maximum profit you can achieve from this transaction. If you cannot achieve any profit, return 0.

Example 1:

Input: prices = [7,1,5,3,6,4]

Output: 5

Explanation: Buy on day 2 (price = 1) and sell on day 5 (price = 6), profit = 6-1 = 5.

Note that buying on day 2 and selling on day 1 is not allowed because you must buy before you sell.

Example 2:

Input: prices = [7,6,4,3,1]

Output: 0

Explanation: In this case, no transactions are done, and the max profit = 0.

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#include <stdio.h>

#include <stdlib.h>

int maxProfit(int *prices*[], int *n*) {

    int profit, max, total\_max = 0, day, stock;

    for (day = 1; day <= *n*; day++)

    {

        max = 0;

        for (stock = day + 1; stock <= *n*; stock++)

        {

            profit = *prices*[stock] - *prices*[day];

            if (profit > max)

            {

                max = profit;

            }

        }

        if (max > total\_max)

        {

            total\_max = max;

        }

    }

    if (total\_max > 0)

        return total\_max;

    else

        return 0;

}

void main()

{

    int prices[100], n, i, total\_max;

    printf("\nEnter the no. of array prices[] elements: ");

    scanf("%d", &n);

    for (i = 1; i <= n; i++)

    {

        printf("\nprices[%d] = ", i);

        scanf("%d", &prices[i]);

    }

    total\_max = maxProfit(prices, n);

    if (total\_max > 0)

        printf("\nGREAT :)!! Your Maximum Profit is = %d", total\_max);

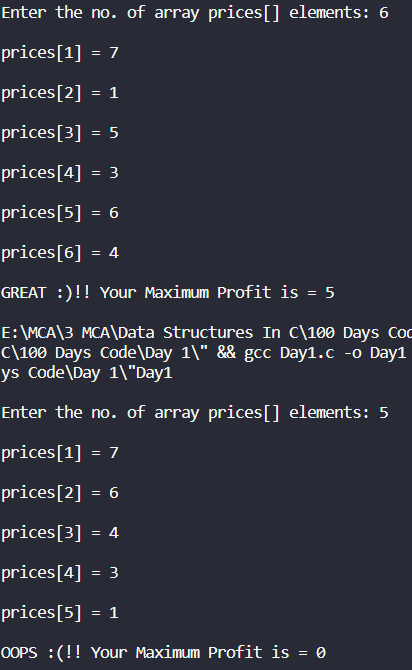
    else

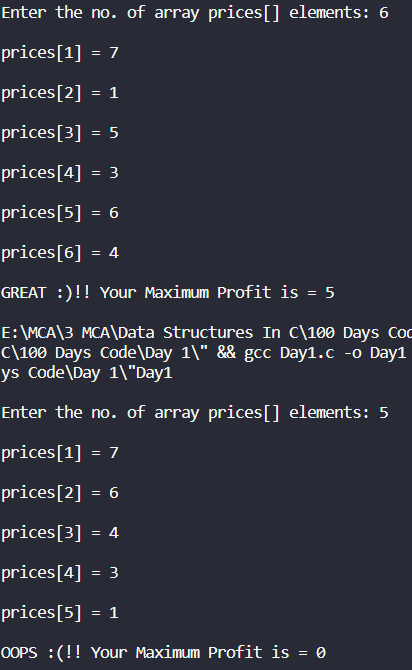
        printf("\nOOPS :(!! Your Maximum Profit is = %d", total\_max);

    printf("\n");

}

**OUTPUT:**

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