# Experiment-3.3

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**Aim** – To demonstrate the concept of Dynamic Programming

## Objective-

* The objective is to build problem solving capability and to learn the basic concepts of data structures.
* The implementation of climbing stairs using dynamic programming.
* The implementation of best time to buy and sell the stock.

## Best time to buy and sell the stock

<https://leetcode.com/problems/best-time-to-buy-and-sell-stock/>

**Code –**

class Solution {

public:

    int maxProfit(vector<int>& prices) {

        int n = prices.size();

        int buyAtPrice = INT\_MAX;

        int maxProfit = 0;

        for(int i=0; i<n; i++){

            buyAtPrice = min(buyAtPrice, prices[i]);

            maxProfit = max(maxProfit, prices[i] - buyAtPrice);

        }

        return maxProfit;

    }

};

## Output -

1. **Climbing Stairs**

<https://leetcode.com/problems/climbing-stairs/>

**Code -**

class Solution {

public:

    int climbStairs(int n) {

        int a=0 ,b=1;

        for(int i=0;i<n;i++){

            int temp=a+b;

            a=b;

            b=temp;

        }

        return b;

    }

};

## Output –

