India vs Pak

Problem Explanation

You are given an array of size X, where A[i] denotes the scores Virat gets if he runs i number of times on a ball where 1<=i<=X. Virat can make maximum X runs. Find the maximum score Virat can get.

Prerequisites

Dynamic Programming

Approach

Let dp[i] be the maximum score Virat can get if there are i runs left.
Now, run a loop j from 1 to i, where j denotes the number of runs Virat takes.
So, at each step subtract j from i and call the recursive function with (i-j) runs left.

At the end, dp[i] will be the maximum of all the recursive calls made.

```
int solve(int x)
{
    if(x==0)return 0;
    if(dp[x]!=-1)return dp[x];
    int i;
    int ans=0;
    for(i=1;i<=x;i++)
```

```
        ans=max(ans,a[i]+solve(x-i));
    dp[x]=ans;
    return ans;
}
```