

# CROSS THE BRIDGE

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Whenever we are standing on a plank  $i$ , we have come on that plank from plank  $i - 1$  or  $i - 2$  if they exist. So we can form the dp relation as:-

$$dp[i] = dp[i - 1] + dp[i - 2]$$

The number of ways we can reach a dangerous plank is 0 as we cannot step foot on it.

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#include <bits/stdc++.h>
using namespace std;

#define ll long long
#define endl "\n"
#define MOD 1000000007
#define SPEED \
    ios_base::sync_with_stdio(false); \
    cin.tie(NULL); \
    cout.tie(NULL);

/*-----*/

void solve()
{
    ll n,m;
    cin>>n>>m;
    vector<ll> v(m);
    for (ll i = 0; i < m;i++)
        cin >> v[i];
    ll x = 0;
    vector<ll> dp(n + 1, 0);
    dp[0] = 1;
    for (ll i = 1; i <= n;i++){
        // Check if the current plank is dangerous
        if(x<m&&i==v[x]){
            dp[i] = 0;
            x++;
        }
        else{
            dp[i] = dp[i - 1];
            if(i>1)dp[i]+=dp[i - 2]; // if i-2 plank exist then add ways to reach it also
        }
        dp[i] %= MOD;
    }
    cout<<dp[n];
}

int main()
{
    SPEED;
    solve();
    return 0;
}
```