

Experiment: - 8

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Sub -CC

Sec – 902 B wm

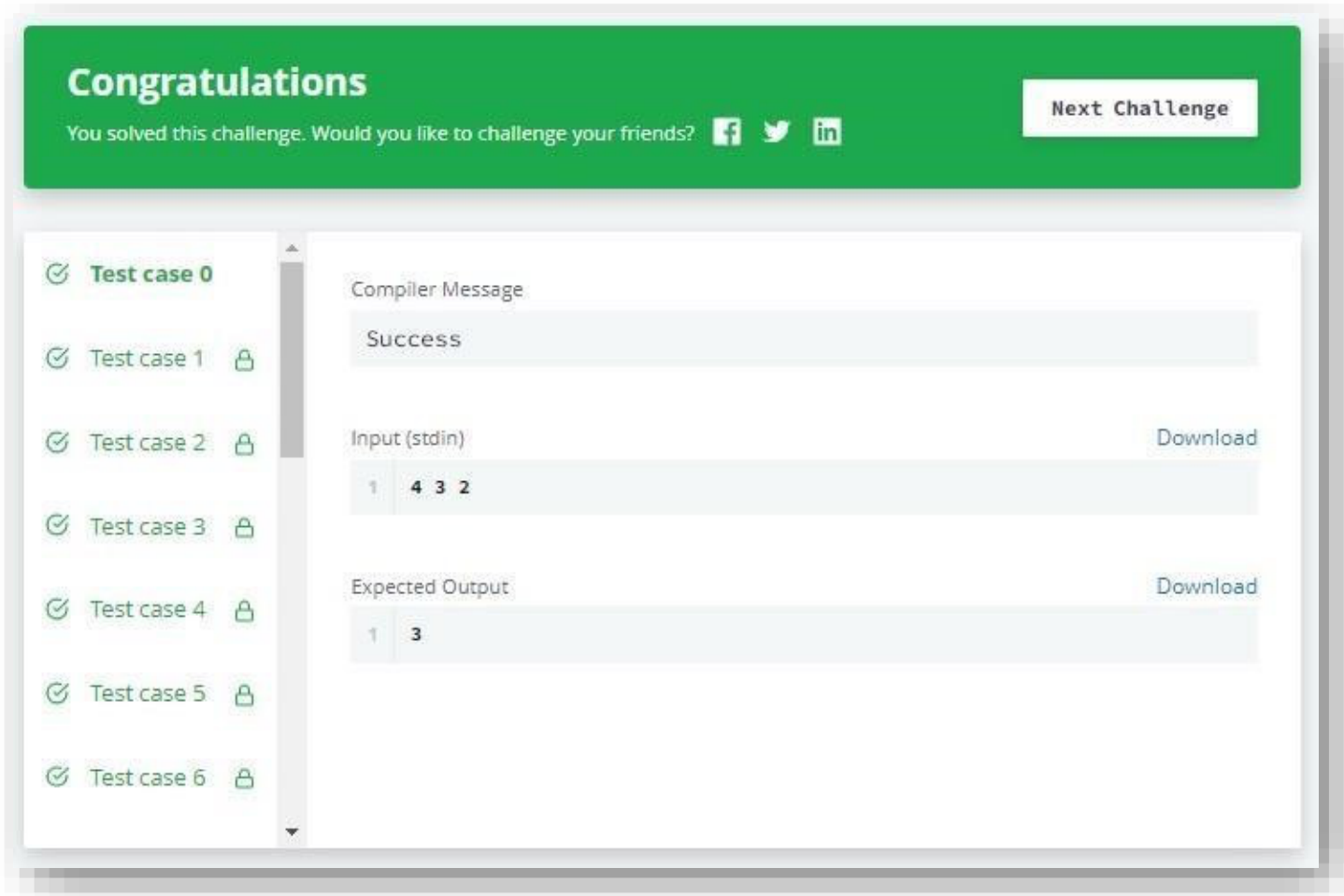
1. Construct the Array

Program Code:

```
#include <bits/stdc++.h>
using namespace std;
typedef long long ll;
const int mod =
1000000007;
int Inv(int a)
{   int res = 1;
int p = mod - 2;
while (p) {
    if (p & 1) res = ll(res) * a % mod;
    p
    >>= 1; a = ll(a) * a % mod;
    }   return
res;
}
int main(void) {   int
n;   int k;
int x;
    cin >> n >> k >> x;   int
res1 = 1, res0 = 0;   for (int i
= 1; i < n; i++) {   int
nres1 = res0;
    int nres0 = (ll(res1) * (k - 1) + ll(res0) * (k - 2)) % mod;
res1 = nres1; res0 = nres0;
    }
    if (x == 1) printf("%d\n", res1);   else
{
    int res = ll(res0) * Inv(k - 1) % mod;   printf("%d\n",
res);
    }
```

}

Output:



The screenshot shows a challenge completion interface. At the top, a green banner displays "Congratulations" and a "Next Challenge" button. Below the banner, a message asks if the user wants to challenge friends, with social media icons for Facebook, Twitter, and LinkedIn. On the left, a list of test cases is shown, with "Test case 0" selected and marked as completed. The main area displays the results for "Test case 0":

- Compiler Message:** Success
- Input (stdin):** 4 3 2 (Download)
- Expected Output:** 3 (Download)

2. Sam and Substrings

Program Code:

```
#include <iostream>
#include <string.h> using namespace
std;

#define MOD 1000000007 int
main(void) { char
num[200005]; gets(num); int
len = strlen(num); long long factor
= 1, ans = 0;
for (int i = len-1; i >= 0; -i)
{
long long tmp = (num[i]-'0') * (i+1) * factor % MOD;
ans += tmp; ans %= MOD;
factor = (factor * 10 + 1) % MOD;
}
printf("%d\n", ans);
}
```

Output:

The screenshot displays a 'Congratulations' message at the top, indicating that the challenge has been solved. Below this, there are social media sharing options (Facebook, Twitter, LinkedIn) and a 'Next Challenge' button. The main area shows a list of test cases on the left, all of which are marked as passed. On the right, the 'Compiler Message' section shows 'Success'. The 'Input (stdin)' section shows the input '16', and the 'Expected Output' section shows the output '23'.