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UID	20BCS1409
SECTION	DWWC-43
DATE	03-01-2023

## **DAY 1 (Questions)**

### **1. Gold Mining CODE:**

```
#include <iostream> using
namespace std;
```

```
int main() {
    // your code goes
    here int t; cin >> t;
```

```
    whi
    le(t--){
        long long int n, x,
        y;    cin >> n >> x >> y;
        long long int
        friends = n+1;    long long
        int capacity = friends * y;
```

```

if(x<=capacity){

cout << "YES"

<<endl;      }

else{      cout <<

"NO" << endl;    }

    }

    return 0;

}

```

## **OUTPUT:**

Status: ✔ Correct Answer

Submission ID: [84126798](#)

Time:

0.01s

Sub-Task	Task #	Result (time)
1	1	AC (0.003374)
1	2	AC (0.005081)
1	3	AC (0.005318)
Subtask Score: 100.00%		Result - AC
Total Score = 100.00%		

## **2. Sum in a Triangle**

### **Code:**

```

#include <bits/stdc++.h> using namespace std; #define ll unsigned long
long int ll f(int n,vector<vector<ll>> &a,int i,int j,vector<vector<ll>> &dp)

```

```

{    if(i==n-1)    return
a[n1][j];    if(dp[i][j]!=-1)
return dp[i][j]; ll

down=a[i][j]+f(n,a,i+1,j,dp);

ll

diag=a[i][j]+f(n,a,i+1,j+1,dp);

return

dp[i][j]=max(down,diag);

}

```

```

int main() {

    ll t;

    cin>>t;

    while(t--)

    {        int n;        cin>>n;

vector<vector<ll>> a(n,vector<ll> (n));        vector<vector<ll>>

dp(n,vector<ll> (n,-1));

        for(int i=0;i<n; i++){
for(int j=0;j<=i;j++)

        {

cin>>a[i][j];

        }

    }

cout<<f(n,a,0,0,dp)<<endl;

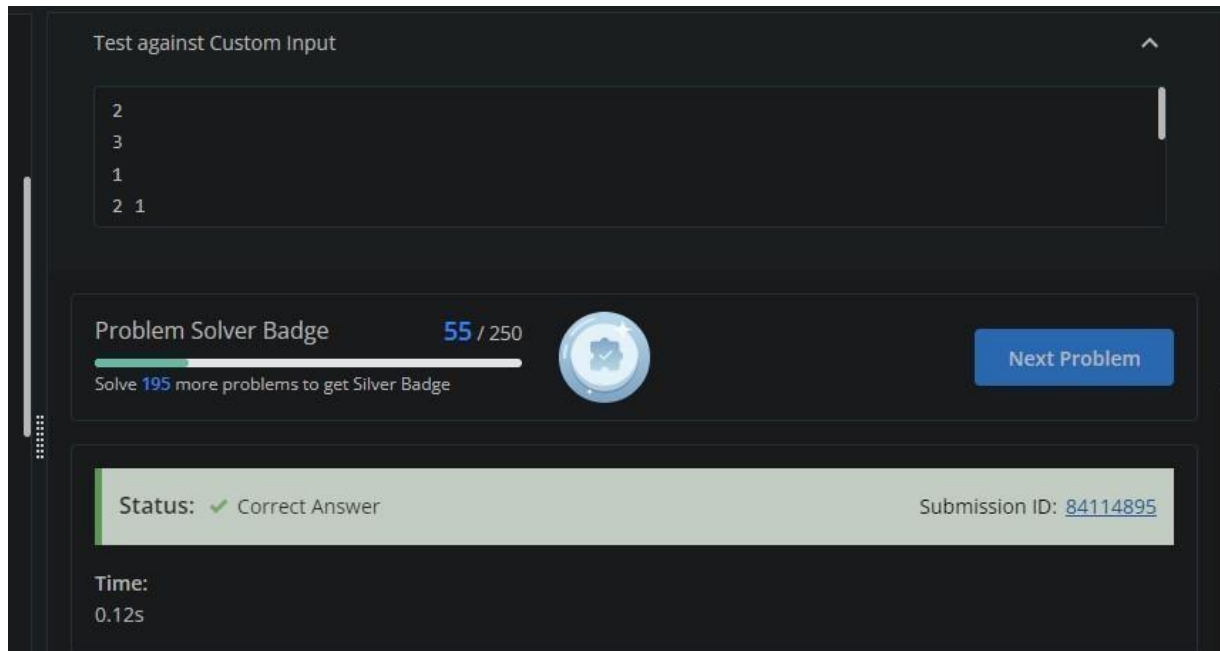
```

```
}
```

```
return 0;
```

```
}
```

## **OUTPUT:**



### **3. Small factorial**

#### **Code:**

```
#include <bits/stdc++.h>
```

```
#include <iostream>
```

```
#include <boost/multiprecision/cpp_int.hpp> using  
namespace boost::multiprecision; using namespace  
std;
```

```
int main() {  
    // your code goes here
```

```
    int tc ;        cin>>tc;  
    while(tc--)
```

```

    {
        int n; cin>>n;  cpp_int
count = 1; for(int i = 1;
i<=n; i++)
    {
        count = count *i;

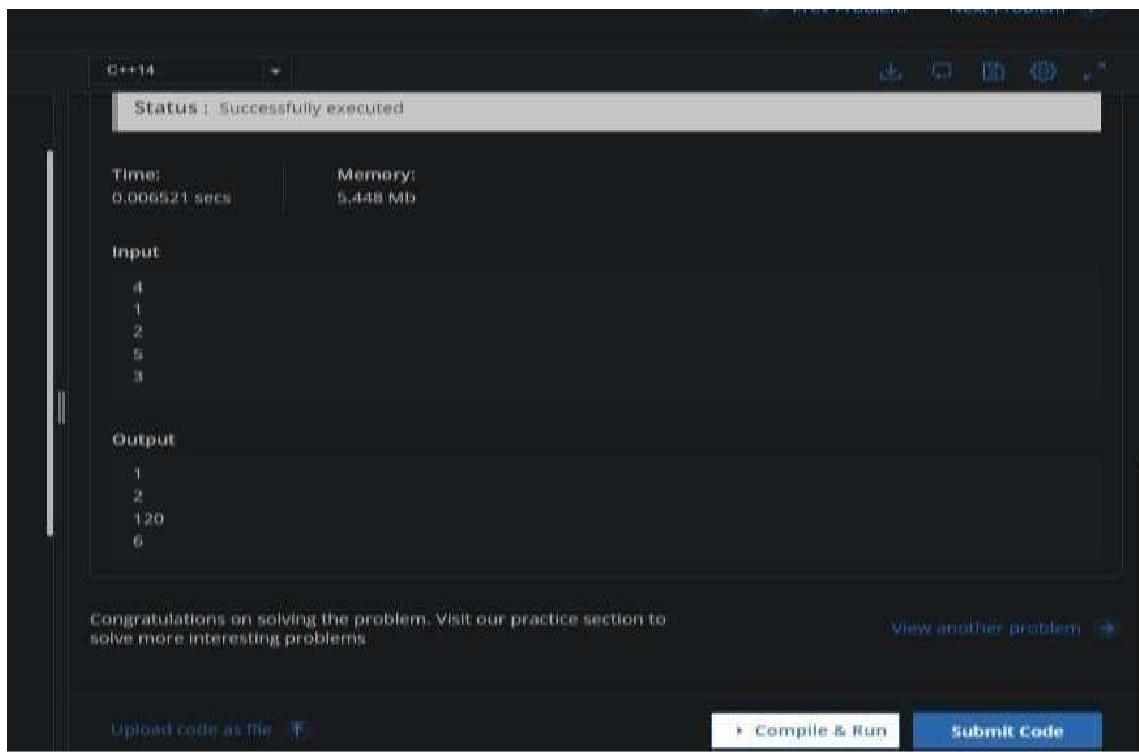
    }

    cout <<count<<endl;

}

```

## OUTPUT:



## 4. Lead game

### Code:

```

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

#define lli long long int
#define ll long long
#define no cout<<"NO \n";
#define yes cout<<"YES \n";
#define test lli trtyuio ;
cin>>trtyuio; while(trtyuio--)
int main(){
ios_base::sync_with_stdio(fa
lse); cin.tie(NULL); lli
n;cin>>n; lli
a=0,b=0,ans,sum=0; for
(int i = 0; i < n; i++)

{

    int x,y;cin>>x>>y;

a+=x;b+=y;
if(abs(ab)>sum)

{
if(a>b)

{

    ans=1;sum=abs(a-
b);

}

else

{

    ans=2;sum=abs(a-
b);

}

}

}

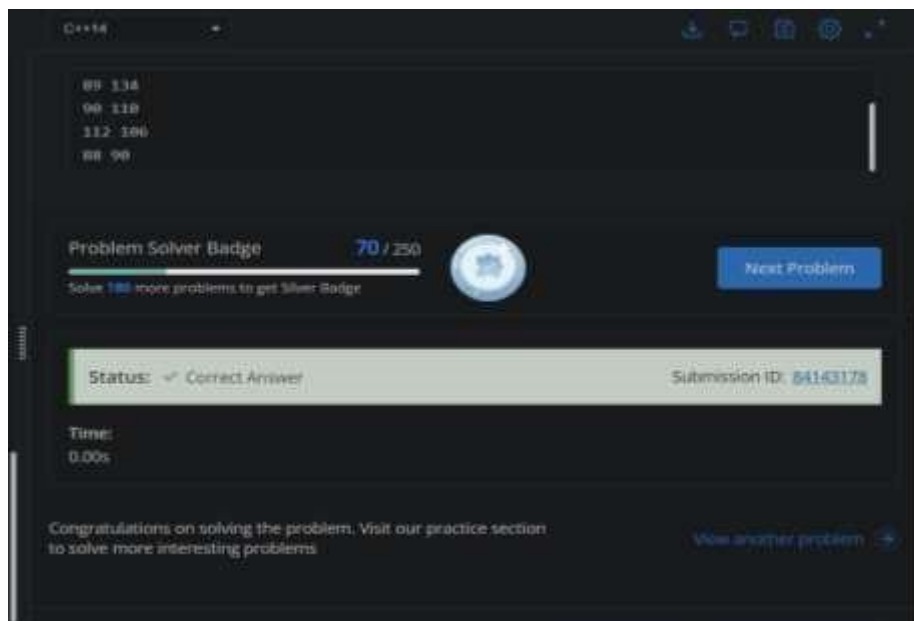
cout<<ans<<" "<<sum;

return 0;

}

```

**OUTPUT:**



## 5. Fire and Ice

### Code:

```
#include <stdio.h> #include<inttypes.h> void multiply(uint64_t
F[2][2], uint64_t M[2][2],uint64_t k); void power(uint64_t F[2][2],
uint64_t n,uint64_t k); uint64_t fib(uint64_t n,uint64_t k)
{
    uint64_t F[2][2] =
    {{1,1},{1,0}}; if (n == 0)
    return 0; power(F, n-1,k);
    return F[0][0];
}

void power(uint64_t F[2][2], uint64_t n,uint64_t k)
{
    if( n == 0 || n == 1)
    return; uint64_t M[2][2] =
    {{1,1},{1,0}};

    power(F, n/2,k);
    multiply(F, F,k);

    if (n%2 != 0)
    multiply(F, M, k);
}
```

```

void multiply(uint64_t F[2][2], uint64_t M[2][2],uint64_t k)
{
    uint64_t x = (F[0][0]*M[0][0] + F[0][1]*M[1][0])%k; uint64_t y =
(F[0][0]*M[0][1] + F[0][1]*M[1][1])%k; uint64_t z =
(F[1][0]*M[0][0] + F[1][1]*M[1][0])%k; uint64_t w =
(F[1][0]*M[0][1] + F[1][1]*M[1][1])%k;

    F[0][0] = x;
    F[0][1] = y;

    F[1][0] = z;
    F[1][1] = w;
}

/* Driver program to test above function */ int main()
{
    uint64_t n,k,t;
    scanf("%llu",&t); while(t--)
    {
        scanf("%llu",&n);
        scanf("%llu",&k);
        printf("%llu\n",
(2*fib(n,k))%k);
    }


    return 0;
}

```


## **OUTPUT:**



C++14


Problem Solver Badge 69 / 250 

Solve 181 more problems to get Silver Badge


Status:  Correct Answer Submission ID: [84146153](#)

Time:  
0.58s

Sub-Task	Task #	Result (time)
1	0	AC (0.326222)
Subtask Score: 10.00%		Result - AC
2	1	AC (0.561321)

Upload code as file 

[+ Compile & Run](#) [Submit Code](#)

Status:  Correct Answer Submission ID: [84204694](#)

Time:  
0.00s

Sub-Task	Task #	Result (time)
1	1	AC (0.003749)
1	2	AC (0.003707)
1	3	AC (0.003972)
1	4	AC (0.003989)
Subtask Score: 100.00%		Result - AC

Total Score = 100.00%