Name: Sucheta Pal **UID: 20BCS7901**

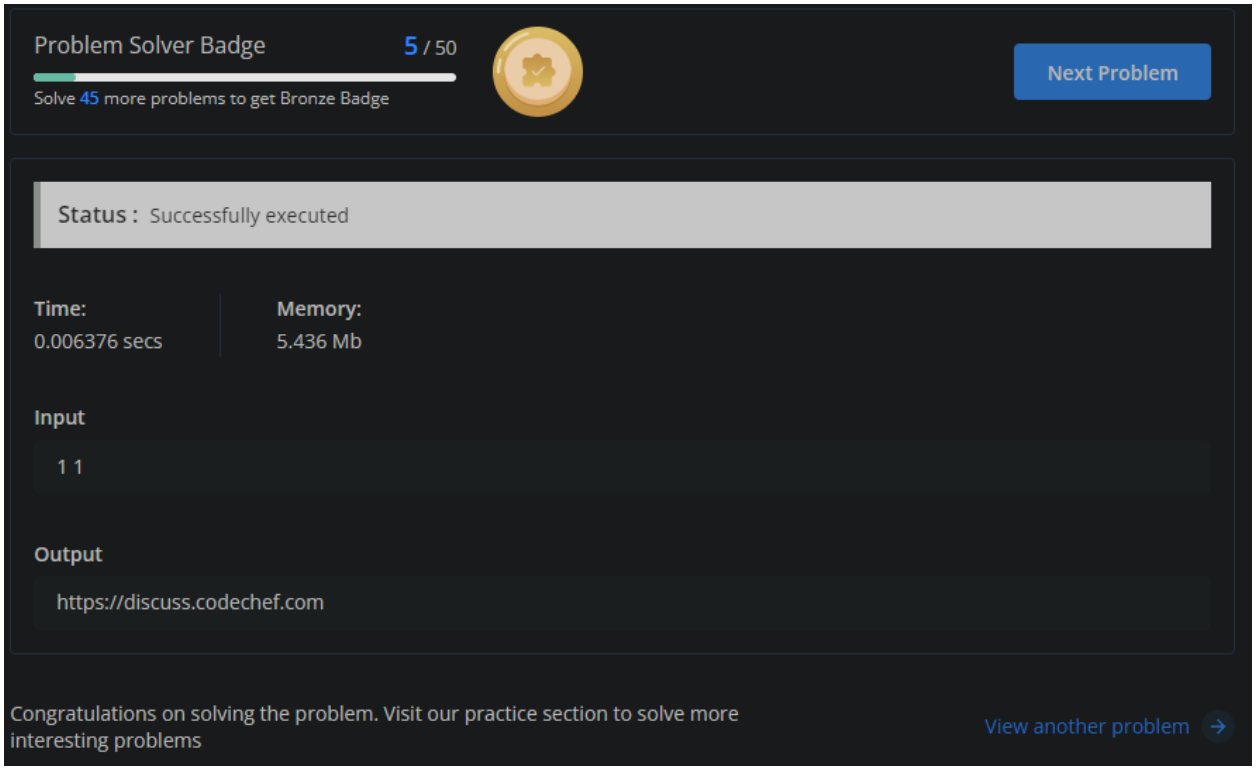
Q1. Important pages on CodeChef.

Code:

```
#include <bits/stdc++.h>
using namespace std;
// INT HERE MEANS LONG LONG
#define int long long
#define endl '\n'



int32_t main(){
    ios_base::sync_with_stdio(false);
    cin.tie(NULL);

    int a,b;
    cin>>a>>b;

    if(a==1 && b==1)
    {
        cout<<"https://discuss.codechef.com";
    }
    else
    {
        if(a==1)
```

```
        cout<<"https://www.codechef.com/contests";


        else
        cout<<"https://www.codechef.com/practice";
    }
    return 0;
}
```

Output:



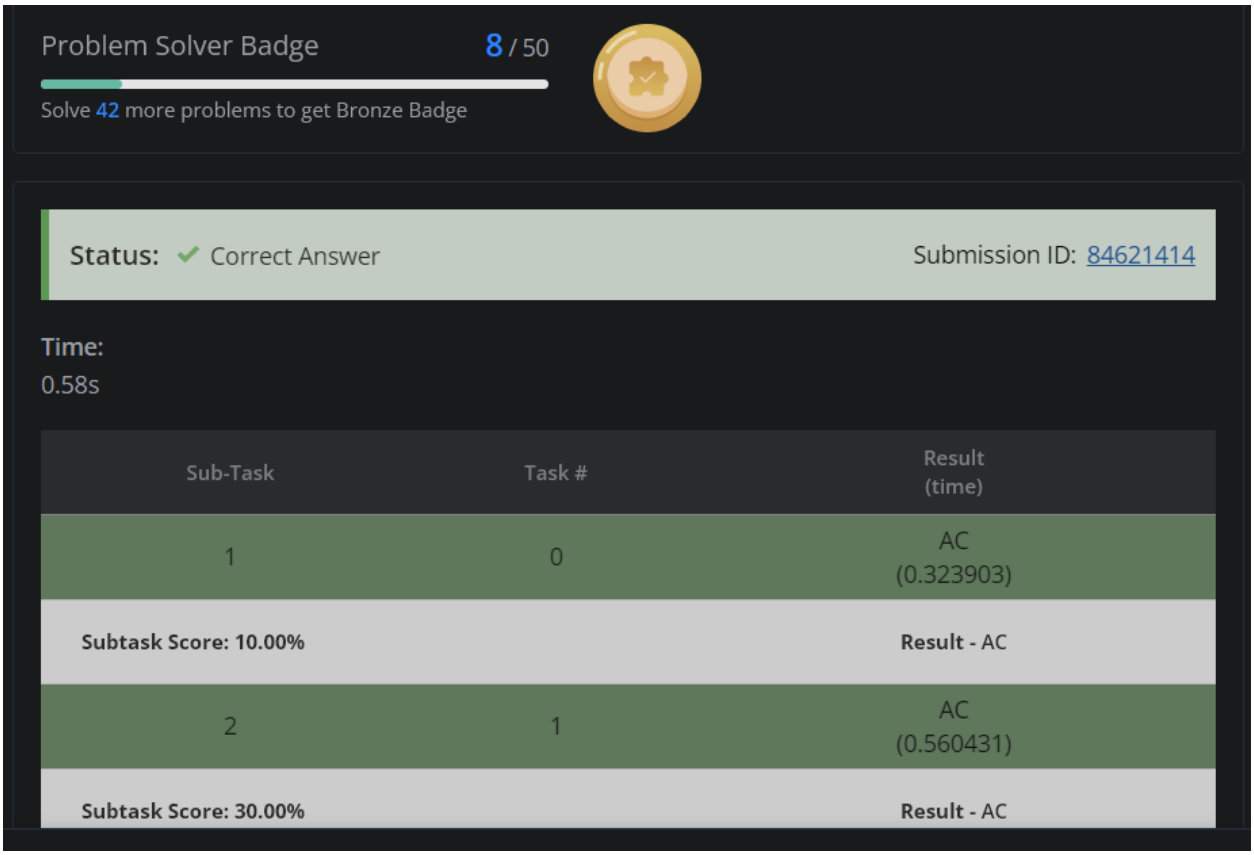
Q2. Fire and Ice.

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;
}
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;
}
```



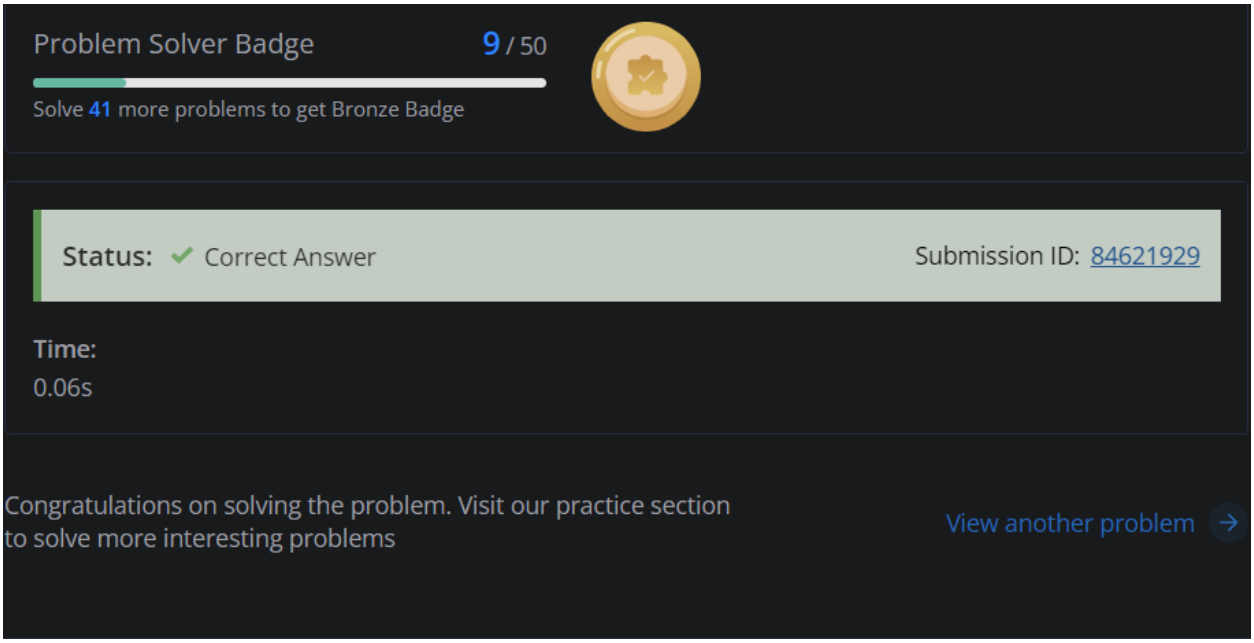
Q3. Mixtures

Code:

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

int mins[101][101];
int m[100];
int mixs(int s,int e)
{
    int sm=0;
    for(int i=s;i<=e;i++)
```

```
    {
        sm+=m[i];
        sm%=100;

    }
    return sm;

}
int calmins(int s,int e){
    if(s>=e)
    {
        return 0;
    }
    if(mins[s][e]>-1){
        return mins[s][e];
    }
      mins[s][e] = INT_MAX;
      for(int i=s;i<=e;i++)
      {

    mins[s][e]=min(mins[s][e],calmins(s,i)+calmins(i+1,e)+mixs(s,i)*mixs(i+1,e));
}
return mins[s][e];
}
```

```
int main() {

#ifndef ONLINE_JUDGE
freopen("input.txt","r",stdin);
freopen("output.txt","w",stdout);
#endif
int n;
while(cin>>n){
    for(int i=0;i<n;i++){
        for(int j=0;j<n;j++){
            mins[i][j]=-1;
        }
    }
    for(int i=0;i<n;i++){
        cin>>m[i];
    }
    cout<<calmins(0,n-1)<<endl;

}
            return 0;


}
```



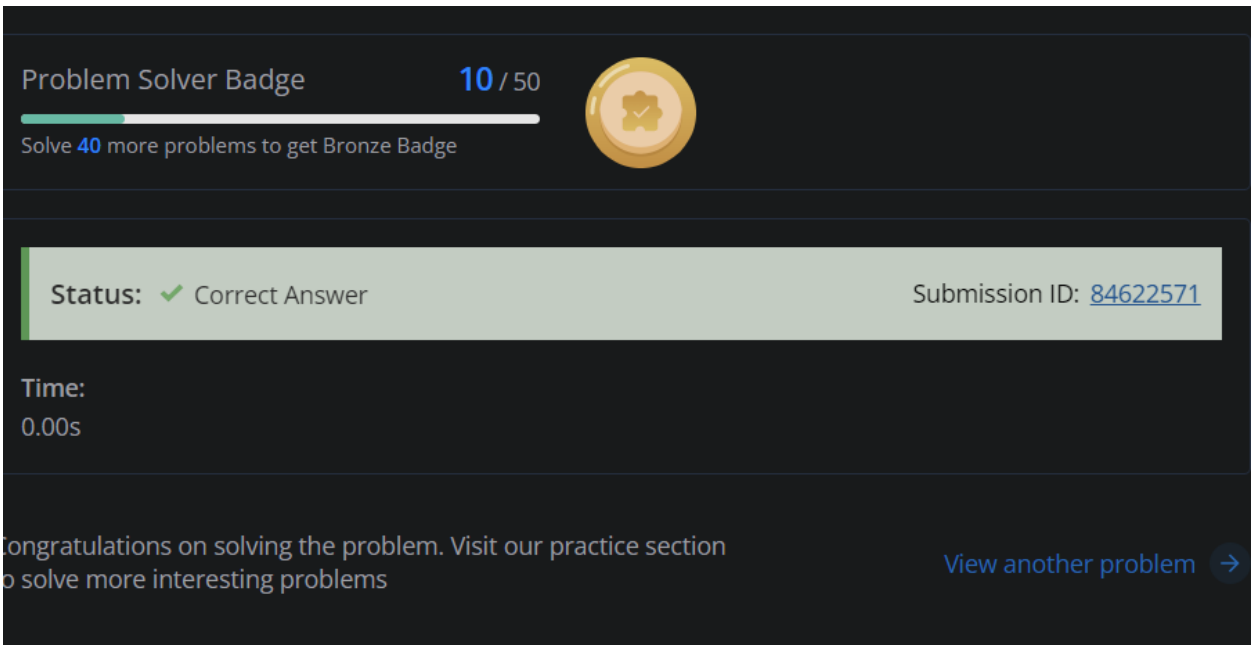
Q4. Binod and Chocolates

Code:

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

using namespace std;

int main() {

        int t;

        cin>>t;

        while(t--) {

           int a, b;

           cin>>a>>b;

           int sum = a + b;

           if(a%3 == 0) {

              cout<<"YES"<<endl;

           }

           else if(b%3 == 0) {
```

```
            cout<<"YES"<<endl;
        }
        else if(sum%3 == 0) {
            cout<<"YES"<<endl;
        }
        else {
            cout<<"NO"<<endl;
        }
    }
    return 0;
}
```

Output:



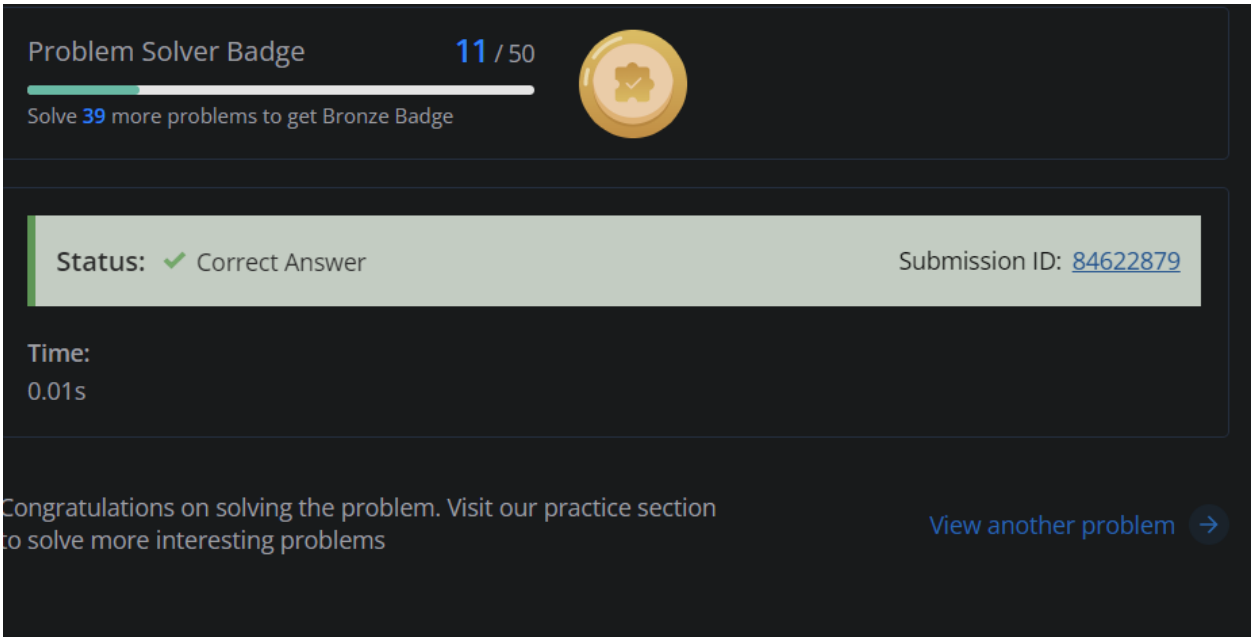
Q5. Special Fibonacci

Code:

```
#include <iostream>
```

```
using namespace std;

int bitwise(int num,int a,int b)
{
    if(num==0)
    {
        return a;
    }
    if(num==1)
    {
        return b;
    }
    if(num==2)
    {
        return (a^b);
    }

    return bitwise(num%3,a,b);
}

int main() {
            int a,b;

            int n;
            cin>>n;
```

```
    int num;
    for(int i=0;i<n;i++)
    {
       cin>>a>>b;
       cin>>num;
       cout<<bitwise(num,a,b)<<"\n";
    }
    return 0;
}
```

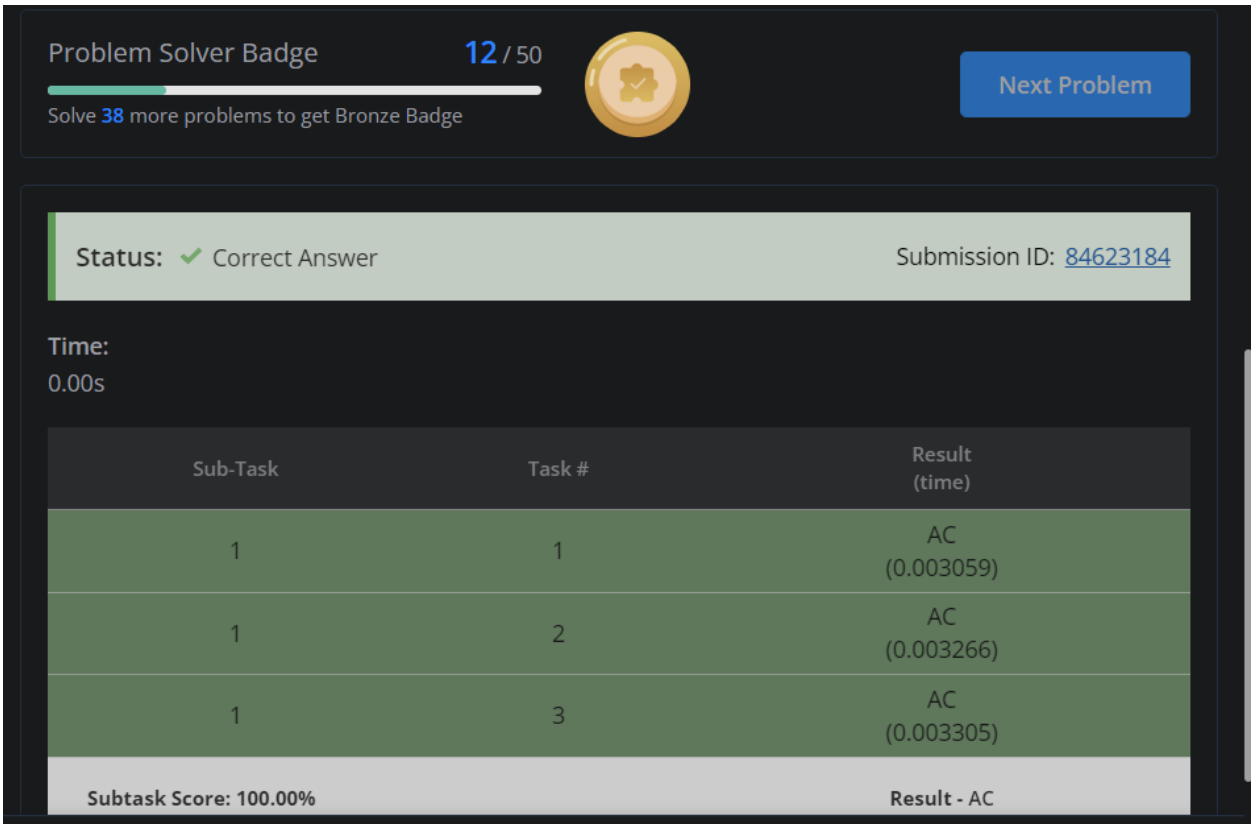


Q6. Gold Mining

Code:

```
#include <stdio.h>


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

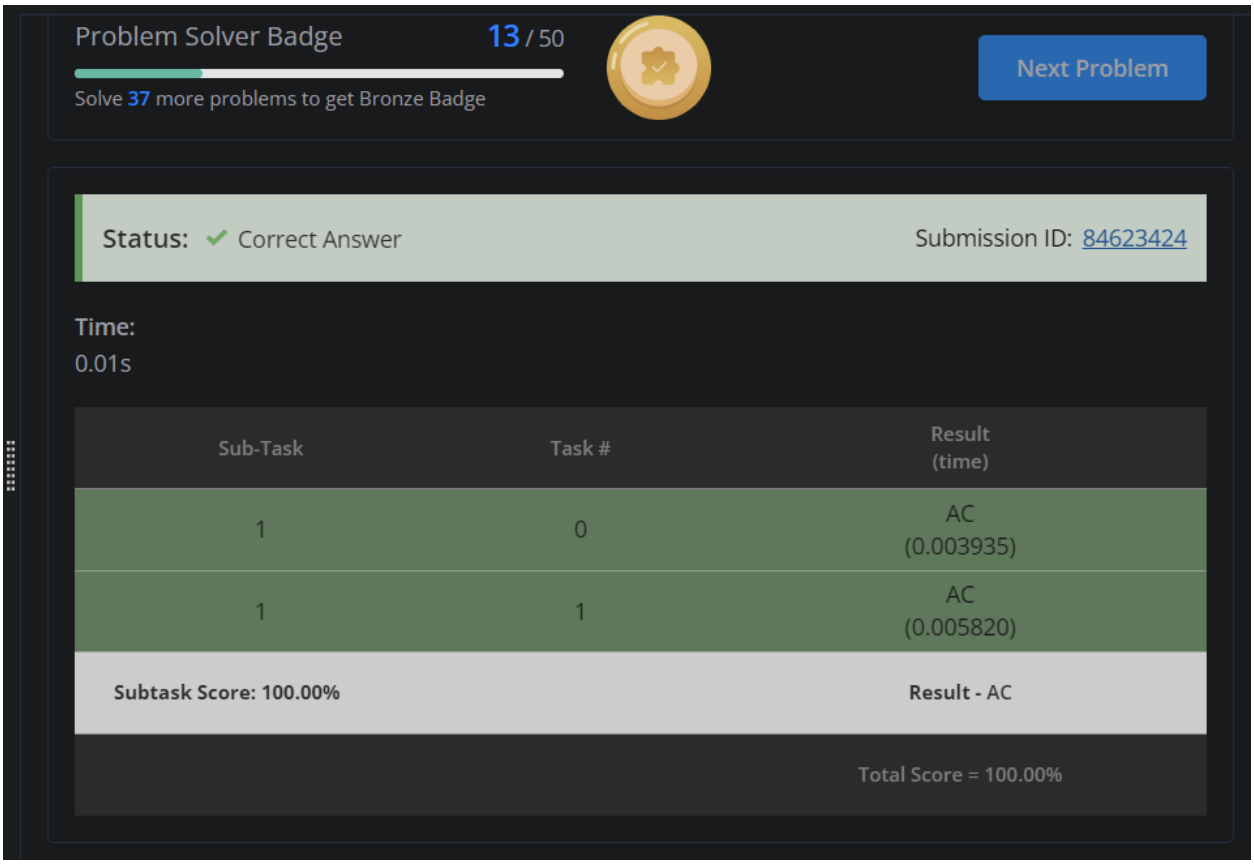
```
    int t,n,x,y;
    scanf("%d",&t);
    while(t--) {
       scanf("%d %d %d",&n,&x,&y);
       if((n+1)*y>=x)
         printf("YES\n");
       else
         printf("NO\n");
    }
          return 0;
}
```



Q7. Chef on Vacation

```
#include <iostream>
```

```
using namespace std;


int main() {
    int t;
    cin>>t;
    while(t--)
    {
        int x,y,z;
        cin>>x>>y>>z;


        if(x+y<=z)
        cout<<"YES"<<endl;
        else
        cout<<"NO"<<endl;


    }
            // your code goes here
            return 0;
}
```


Problem Solver Badge
13 / 50
Solve 37 more problems to get Bronze Badge
Next Problem
Status: Correct Answer
Submission ID: 84623424
Time:
0.01s
Sub-Task
Task #
Result (time)
1
0
AC (0.003935)
1
1
AC (0.005820)
Subtask Score: 100.00%
Result - AC
Total Score = 100.00%