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Class: DWWC-43

Subject: DSA

Domain Winning Camp Worksheet (Practice Questions)

Subject: IT Skills Day 1:

QUESTION-1: Important Page

CODE:

```
#include <iostream>
using namespace std;
int main() {
    // your code goes here
    int a,b;
    cin>>a>>b;
    if(a==0)
        cout<<"https://www.codechef.com/practice"<<endl;
    else if(a==1&&b==0)
        cout<<"https://www.codechef.com/contests"<<endl;
    else{
        cout<<"https://discuss.codechef.com"<<endl;
    }
    return 0;
}
```


OUTPUT:

Test against Custom Input ^

0 1


Problem Solver Badge

66 / 250



Next Problem

Solve 184 more problems to get Silver Badge

Status:  Correct Answer Submission ID: [84158992](#)

Time:
0.00s

QUESTION-2: Kingdom of Fire and Ice

CODE:

```
#include <stdio.h>
#include<inttypes.h>
```

```
/* Anubhav Tyagi */
```

```
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;
}

```


OUTPUT:

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Solve 183 more problems to get Silver Badge

Status:  Correct Answer

Submission ID: [84164229](#)

Time:
0.58s

Sub-Task	Task #	Result (time)
1	0	AC (0.325365)
Subtask Score: 10.00%		Result - AC
2	1	AC (0.561544)
Subtask Score: 30.00%		Result - AC
3	2	AC (0.579116)
Subtask Score: 60.00%		Result - AC
Total Score = 100.00%		

QUESTION-3: Mixtures

CODE:


```
#include <stdio.h>
int main()
{
    int m[100][100],n,i,j,k,q,l;
    while(scanf("%d",&n)!=EOF)
    {
        for(i = 0;i < n;i++) scanf("%d",&m[i][i]);
        if(n==1)
        {
            printf ("%d\n",0);
            continue;
        }
        for(i = 0;i < n-1;i++)
```

```

{
    j = i+1;
    m[i][j] = (m[j][j] * m[i][i]) ;
    m[j][i] = (m[j][j] + m[i][i])% 100;
}
for(l = 3;l <= n;l++)
{
    for( i = 0;i <= n-l;i++)
    {
        j = i+l-1;
        k = i;
        m[i][j] = m[k+1][j] + m[k][k]*m[j][k+1];
        for(k = i+1 ;k < j-1;k++) {
            q = m[i][k]+m[k+1][j] + m[k][i]*m[j][k+1];
            if(q < m[i][j]) m[i][j] = q;
        }
        k = j - 1;
        q = m[i][k] + m[k][i] * m[j][j];
        if(q < m[i][j]) m[i][j] = q;
        m[j][i] = (m[j][j] + m[j-1][i])%100;
    }
}
printf ("%d\n",m[0][n-1]);
}
return 0;
}

```

OUTPUT:

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68 / 250


Solve 182 more problems to get Silver Badge

Status: ✔ Correct Answer
Submission ID: [84165811](#)

Time:
0.00s

Congratulations on solving the problem. Visit our practice section to solve more interesting problems

[View another problem](#) →

QUESTION-4: Binod and Chocolates


CODE:

```
#include<iostream>
using namespace std;
int main()
{
    int T;
    cin>>T;
    while(T--)
    {
        int A,B;
        cin>>A>>B;
        if(A%3 == 0 || B%3 == 0 || (A+B)%3 == 0)
        {
            cout<<"YES"<<endl;
        }
        else
        {
            cout<<"NO"<<endl;
        }
    }
    return 0;
}
```

OUTPUT:

Problem Solver Badge

69 / 250



Solve 181 more problems to get Silver Badge

Status: ✓ Correct Answer

Submission ID: [84167287](#)

Time:
0.00s

Congratulations on solving the problem. Visit our practice section to solve more interesting problems

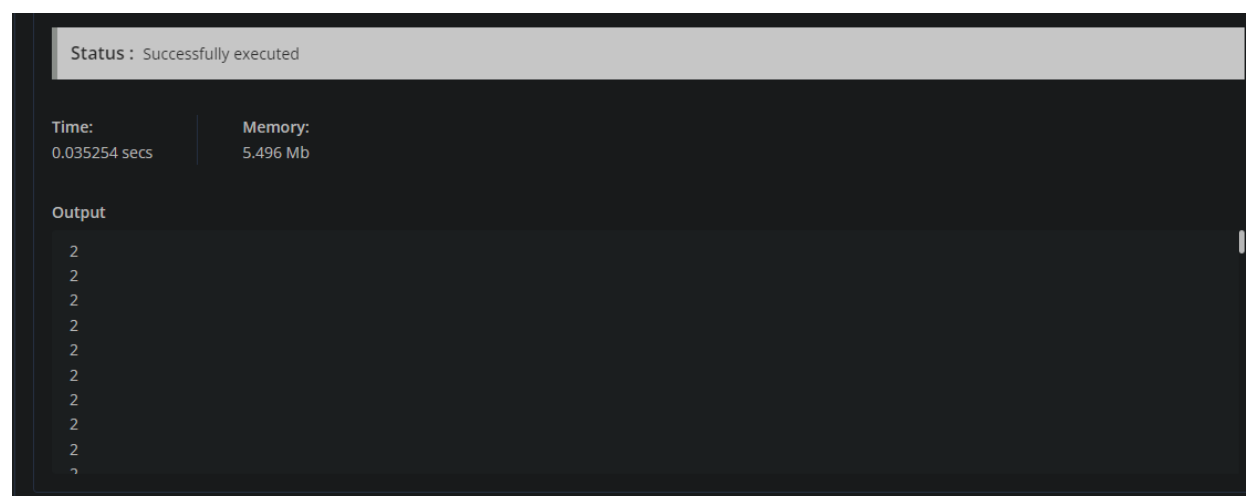
[View another problem](#) →

QUESTION-5: SPECIAL FIBONACCI

CODE:

```
#include <iostream>
using namespace std;
long CalXor(long a,long b,long n){
    if(n==0){
        return a;
    }
    if(n==1){
        return b;
    }
    if(n==2){
        return a^b;
    }
    return CalXor(a,b,n%3);
}
int main() {
    int t;
    cin>>t;
    while(t--){
        long a,b,n;
        cin>>a>>b>>n;
        cout<<CalXor(a,b,n)<<endl;
    }
    return 0;
}
```

OUTPUT:



The screenshot shows a terminal window with a status bar at the top indicating "Status : Successfully executed". Below the status bar, there are two columns of execution statistics: "Time: 0.035254 secs" and "Memory: 5.496 Mb". The main area of the terminal is labeled "Output" and contains ten lines, each displaying the number "2".