CodeQuotient

Department of Computer Science & Engineering

LAB MANUAL

Coding - Marathon_SuperCoders

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Course Name	**Coding - Marathon_SuperCoders**

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Aim: Nth Fibonacci number modulo M

Given 2 non negative integers **n** and **m**, find the **nth** Fibonacci number modulo **m.**
The nth Fibonacci number **Fn = Fn-1 + Fn-2** (n > 1)**,** where F0 = 0 and F1 = 1.
The Fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, …....

Input Format

First line of input will contain an integer T denoting the number of testcases.
Each of next T lines will contain two space separated integers denoting n and m respectively.

Output Format

Print the value of (nth Fibonacci number) % m.

Constraints:

1 <= T <= 10
0 <= n <= 150
1 <= m <= (10^9)+7

Sample Input

2 // Testcases
4 8 // n m (testcase 1)
7 6 // n m (testcase 2)

Sample Output

3
1

Explanation:

F4 = 3, therefore 3 % 8 = 3
F7 = 13, therefore 13 % 6 = 1

Solution:

```
int nthFibonacciTerm(int n, int m) {
  // Complete the given function
  if(n==0) return 0;
  if(n==1) return 1%m;
    int a=0;
    int b=1;
    for(int i=2;i<n+1;i++){
        int temp=b;
        b=(b+a)%m;
        a=temp;
    }
    return b;
}
```


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