



**East West University**  
**Department of Computer Science and Engineering**

**Course: CSE 246( Algorithms)**  
**Section - 02**

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Lab Report:01

## 1. Fibonacci Series

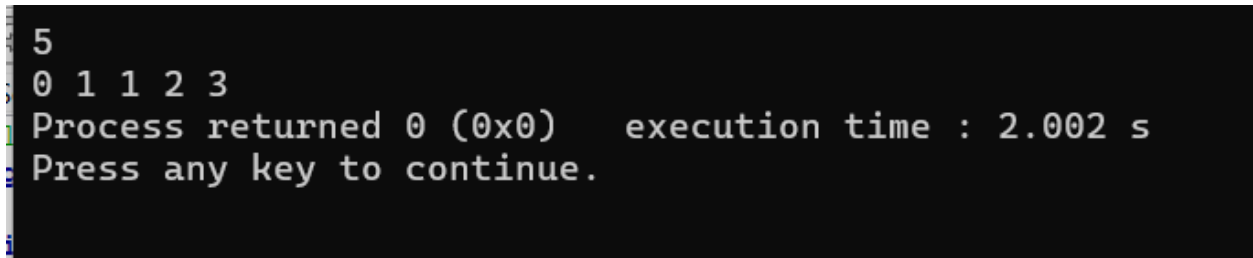
```
#include<bits/stdc++.h>
using namespace std;

int fibonacci(int n) {

    if(n<=1){
        return n;
    }
    int l=fibonacci(n-1);
    int s=fibonacci(n-2);
    return l+s;
}

int main(){
    int n;
    cin>>n;
    for(int i=0;i<n;i++){
        cout<<fibonacci(i)<< " ";
    }
}
```

Output:



```
5
0 1 1 2 3
Process returned 0 (0x0)    execution time : 2.002 s
Press any key to continue.
```

## 2. Check Prime Number

```
#include <bits/stdc++.h>
using namespace std;
int main(){
    int n;
    cin>>n;
    if (n <= 1) {
        cout << "Not Prime" << endl;
        return 0;
    }

    bool isPrime = true;
    for (int i = 2; i <= sqrt(n); i++) {
        if (n % i == 0) {
            isPrime = false;
            break;
        }
    }
    if (isPrime)
        cout << "Prime" << endl;
    else
        cout << "Not Prime" << endl;

    return 0;
}
```

7

Prime

Process returned 0 (0x0) execution time : 2.715 s  
Press any key to continue.

```
10
Not Prime

Process returned 0 (0x0)   execution time : 2.015 s
Press any key to continue.
```

### 3. Calculate the Area of a Trapezium

```
#include <iostream>
using namespace std;
int main(){
    float a,b,h;
    cin>>a>>b>>h;
    float ar=((a+b)*h)/2;
    cout<<ar<< '\n';
}
```

Output

```
5 7 4
24

Process returned 0 (0x0)   execution time : 2.370 s
Press any key to continue.
```

### 4. Count Divisors of a Number

```
#include <bits/stdc++.h>
using namespace std;
int main(){
    int n;
    cin>>n;
    int c=0;
    for(int i=1;i<=sqrt(n);i++){
```

```

    if(n%i==0){
        if(i==n/i){
            c++;
        }else{
            c+=2;
        }
    }

}

cout<<c<<endl;
}

```

Output

```

12
6

Process returned 0 (0x0)   execution time : 1.938 s
Press any key to continue.
|

```

## 5. Sum of Prime Factors

```

#include <iostream>
using namespace std;
int main() {
    int n;
    cin >> n;
    int sum = 0;
    if (n % 2 == 0) {
        sum += 2;
        while (n % 2 == 0)
            n /= 2;
    }
    for (int i = 3; i * i <= n; i += 2) {

```

```
        if (n % i == 0) {  
            sum += i;  
            while (n % i == 0)  
                n /= i;  
        }  
    }  
    if (n > 2)  
        sum += n;  
  
    cout << sum << endl;  
    return 0;  
}
```

Output

```
12  
5
```

```
Process returned 0 (0x0)   execution time : 2.733 s  
Press any key to continue.  
|
```