

C++ Templates

Use these templates in the coding round if C++ is allowed.

Basic input-output

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

int main() {
    ios::sync_with_stdio(false);
    cin.tie(nullptr);

    int n;
    cin >> n;
    cout << n << "\n";
    return 0;
}
```

Array input

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

int main() {
    int n;
    cin >> n;
    vector<int> a(n);
    for (int i = 0; i < n; i++) cin >> a[i];

    for (int x : a) cout << x << " ";
    return 0;
}
```

String input

For single word:

```
string s;
cin >> s;
```

For full line with spaces:

```
string s;  
getline(cin, s);
```

If `getline` comes after `cin`, consume newline:

```
cin.ignore();  
getline(cin, s);
```

Prime check

```
bool isPrime(int n) {  
    if (n < 2) return false;  
    if (n == 2) return true;  
    if (n % 2 == 0) return false;  
    for (int i = 3; i * i <= n; i += 2) {  
        if (n % i == 0) return false;  
    }  
    return true;  
}
```

GCD and LCM

```
int gcd(int a, int b) {  
    while (b != 0) {  
        int r = a % b;  
        a = b;  
        b = r;  
    }  
    return a;  
}  
  
long long lcm(int a, int b) {  
    return 1LL * a / gcd(a, b) * b;  
}
```

Frequency map

```
unordered_map<int, int> freq;  
for (int x : a) {  
    freq[x]++;  
}
```

For characters:

```
vector<int> count(256, 0);
for (char ch : s) {
    count[(unsigned char)ch]++;
}
```

Reverse string

```
reverse(s.begin(), s.end());
```

Sort array

```
sort(a.begin(), a.end());
```

Two pointers

```
int left = 0, right = n - 1;
while (left < right) {
    int sum = a[left] + a[right];
    if (sum == target) {
        cout << "YES\n";
        return 0;
    } else if (sum < target) {
        left++;
    } else {
        right--;
    }
}
cout << "NO\n";
```