

Prime Factor in C++

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

```
class PrimeFactors {
public:
    static void main() {
        int n = 26;
        int n2 = 2;

        while (n2 * n2 <= n) {
            while (n % n2 == 0) {
                n = n / n2;
                cout << n2 << " ";
            }
            n2++;
        }

        if (n != 1) {
            cout << n << " ";
        }
    }
};
```

```
int main() {
    PrimeFactors::main();
    return 0;
}
```

Print all **prime factors** of n = 26.

Logic:

- Start with $n2 = 2$.
- While $n2 * n2 \leq n$, divide n by $n2$ as long as it's divisible.
- Increment $n2$ and repeat.
- After the loop, if $n \neq 1$, print the remaining prime factor.

Dry Run Table:

Step	n2	n	n % n2 == 0	Action	Output
1	2	26	Yes	$n = 26 / 2 = 13$	2
2	2	13	No	$n2++$	
3	3	13	No	$n2++$	
4	4	13	No	$n2++$	
5	5	13	No	$n2++$	
6	6	13	$6*6 > 13 \rightarrow$ stop		
7	-	13	-	$n \neq 1 \rightarrow$ print n	13

Final Output:

2 13