

Count Set bits in C++

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

int countSetBits(int num) {
    int count = 0;
    while (num != 0) {
        count += num & 1;
        num >>= 1;
    }
    return count;
}

int main() {
    int num = 11; // Binary: 1011
    int count = countSetBits(num);
    cout << "Number of set bits: " << count << endl;

    return 0;
}
```

Dry Run Table:

Iteration	num (binary)	num & 1	count	num >> 1 (after shift)
1	1011 (11)	1	1	0101 (5)
2	0101 (5)	1	2	0010 (2)
3	0010 (2)	0	2	0001 (1)
4	0001 (1)	1	3	0000 (0)

✔ Final Output:

Number of set bits: 3