

Subsets in C++

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

int main() {
    int n = 4;
    for (int b = 0; b < (1 << n); b++) {
        cout << b << endl;
    }

    return 0;
}
```

You're generating all numbers from 0 to $2^n - 1$ using bit manipulation!

🔍 Breakdown:

- $n = 4 \rightarrow \text{total combinations} = 2^4 = 16$
- $(1 \ll n)$ means 1 shifted left n times \rightarrow equals 2^n
- Loop runs from 0 to 15, printing each value

📊 Dry Run Table:

b	Binary of b
0	0000
1	0001
2	0010
3	0011
4	0100
5	0101
6	0110
7	0111
8	1000
9	1001
10	1010
11	1011
12	1100
13	1101
14	1110
15	1111

Output:-
0

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	