Generate Binary in C++

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

vector<string> generate(int N) {
    vector<string> ans;
    queue<string> q;
    q.push("1");
    while (N-- > 0) {
        string rem = q.front();
        q.pop();
        ans.push_back(rem);
        q.push(rem + "0");
        q.push(rem + "1");
    }
    return ans;
}

int main() {
    int N = 5;
    vector<string> binaryNumbers = generate(N);
    for (string num : binaryNumbers) {
        cout << num << endl;
    }
    return 0;
}
```

Goal:

Generate the first N binary numbers (as strings) from 1 to the binary representation of N.

⚙ Algorithm Overview:

- Use a **queue** to build binary numbers level-by-level (like a binary tree).
- Start with "1", then append "0" and "1" to each popped string.
- Do this N times.

🔁 Dry Run for N = 5

Iteration	Queue (Before Pop)	Popped (rem)	Added to Result	Queue (After Push)
1	["1"]	"1"	"1"	["10", "11"]
2	["10", "11"]	"10"	"10"	["11", "100", "101"]
3	["11", "100", "101"]	"11"	"11"	["100", "101", "110", "111"]
4	["100", "101", "110", "111"]	"100"	"100"	["101", "110", "111", "1000", "1001"]
5	["101", "110", "111", "1000", "1001"]	"101"	"101"	["110", "111", "1000", "1001", "1010", "1011"]

📤 Final Output:

```
1
10
11
100
101
```


```
1
10
11
100
101
```