HW1

pro
ject

OOP

Presentation

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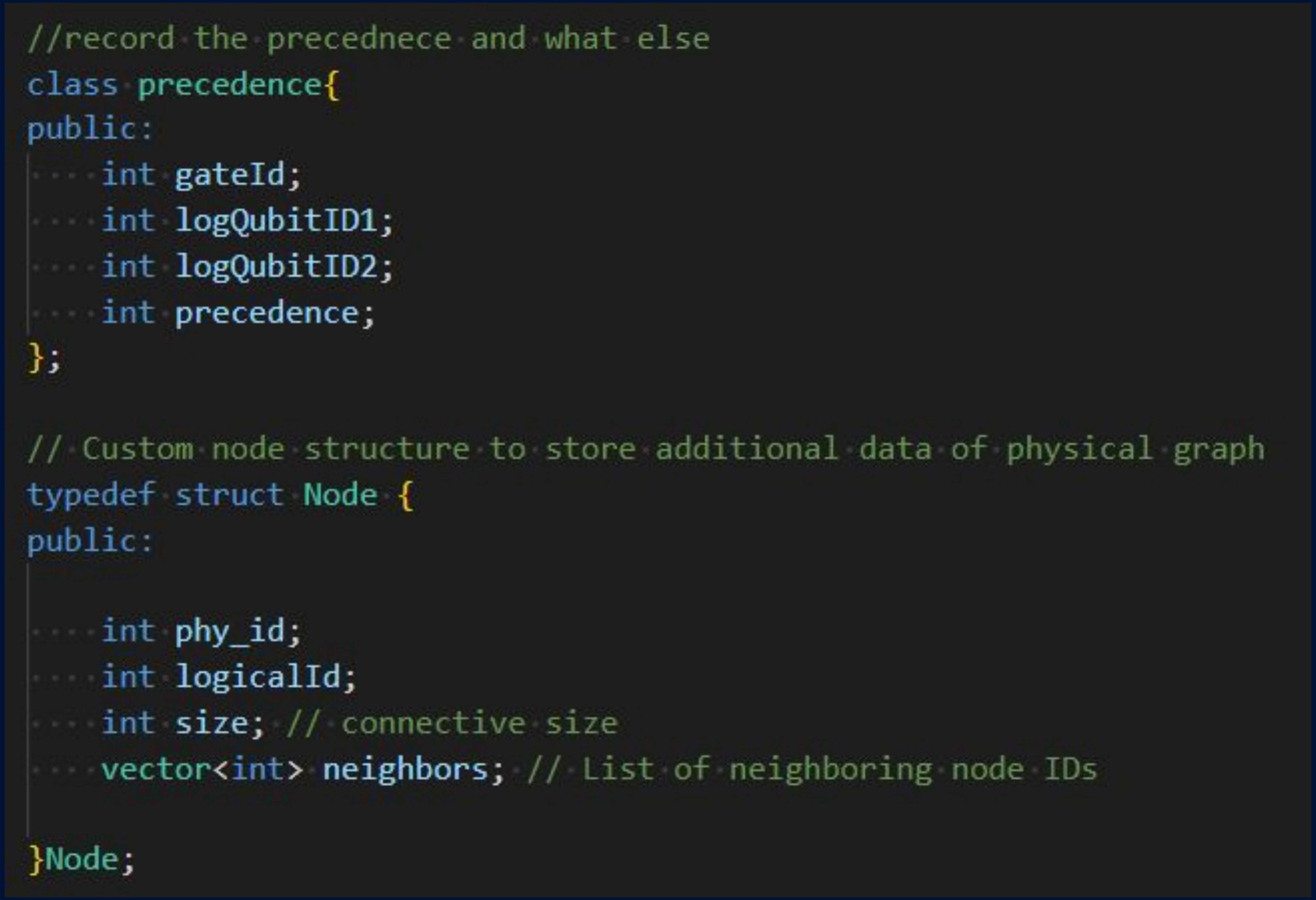
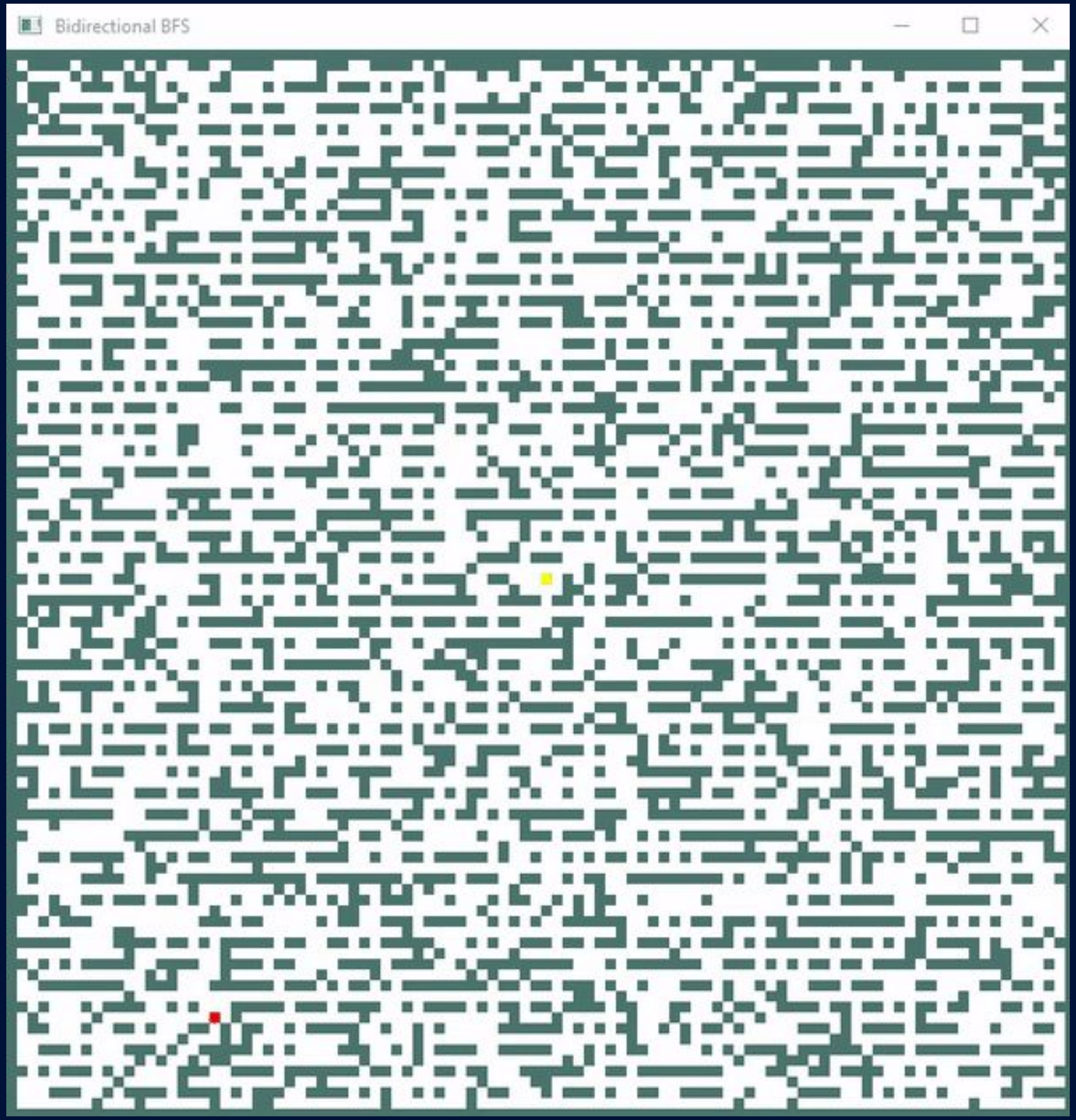
Structure

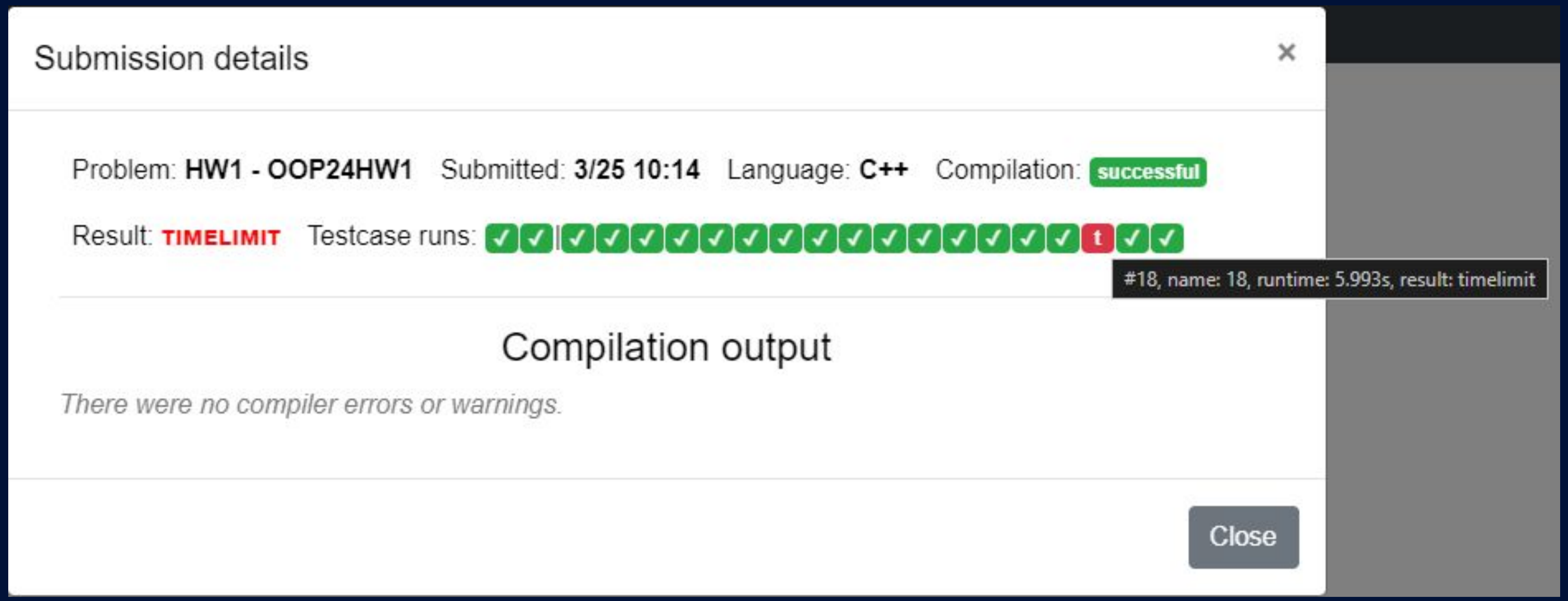


```cpp
//record the precednece and what else
class precedence{
public:
    int gateId;
    int logQubitID1;
    int logQubitID2;
    int precedence;
};

// Custom node structure to store additional data of physical graph
typedef struct Node {
public:

    int phy_id;
    int logicalId;
    int size; // connective size
    vector<int> neighbors; // List of neighboring node IDs

}Node;
```

What I Do

Bidirectional Bfs





Submission details ×

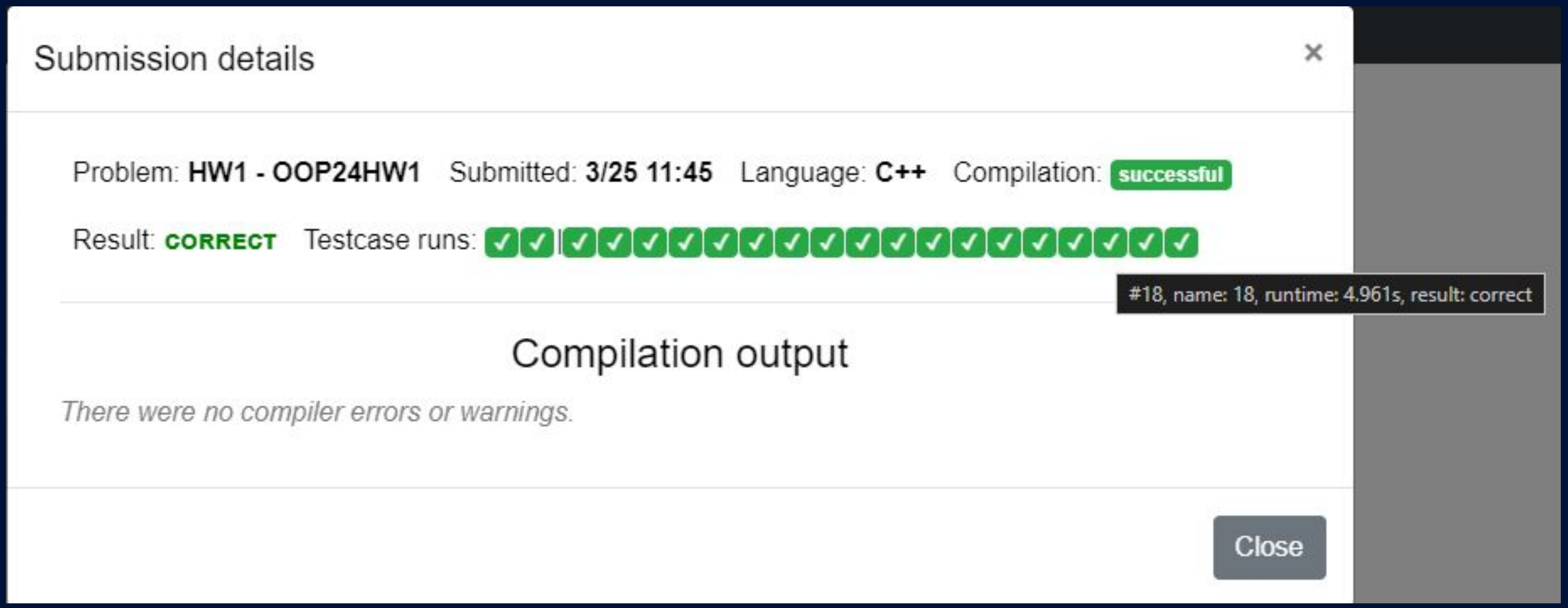
Problem: **HW1 - OOP24HW1** Submitted: **3/25 10:14** Language: **C++** Compilation: successful

Result: TIMELIMIT Testcase runs: ✓✓|✓✓✓✓✓✓✓✓✓✓✓✓✓✓✓t✓✓

#18, name: 18, runtime: 5.993s, result: timelimit

Compilation output

There were no compiler errors or warnings.



Submission details ×

Problem: **HW1 - OOP24HW1** Submitted: **3/25 11:45** Language: **C++** Compilation: successful

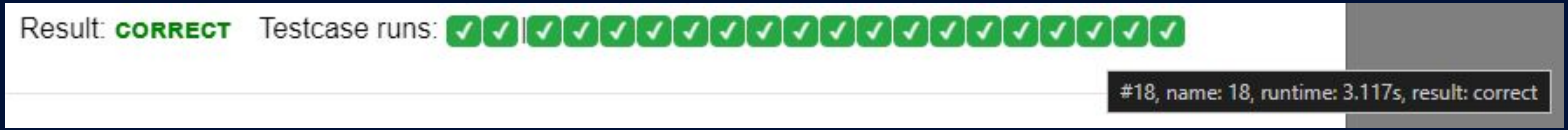
Result: CORRECT Testcase runs: ✓✓|✓✓✓✓✓✓✓✓✓✓✓✓✓✓✓✓✓✓

#18, name: 18, runtime: 4.961s, result: correct

Compilation output

There were no compiler errors or warnings.

After implemernting Bidirectional Bfs

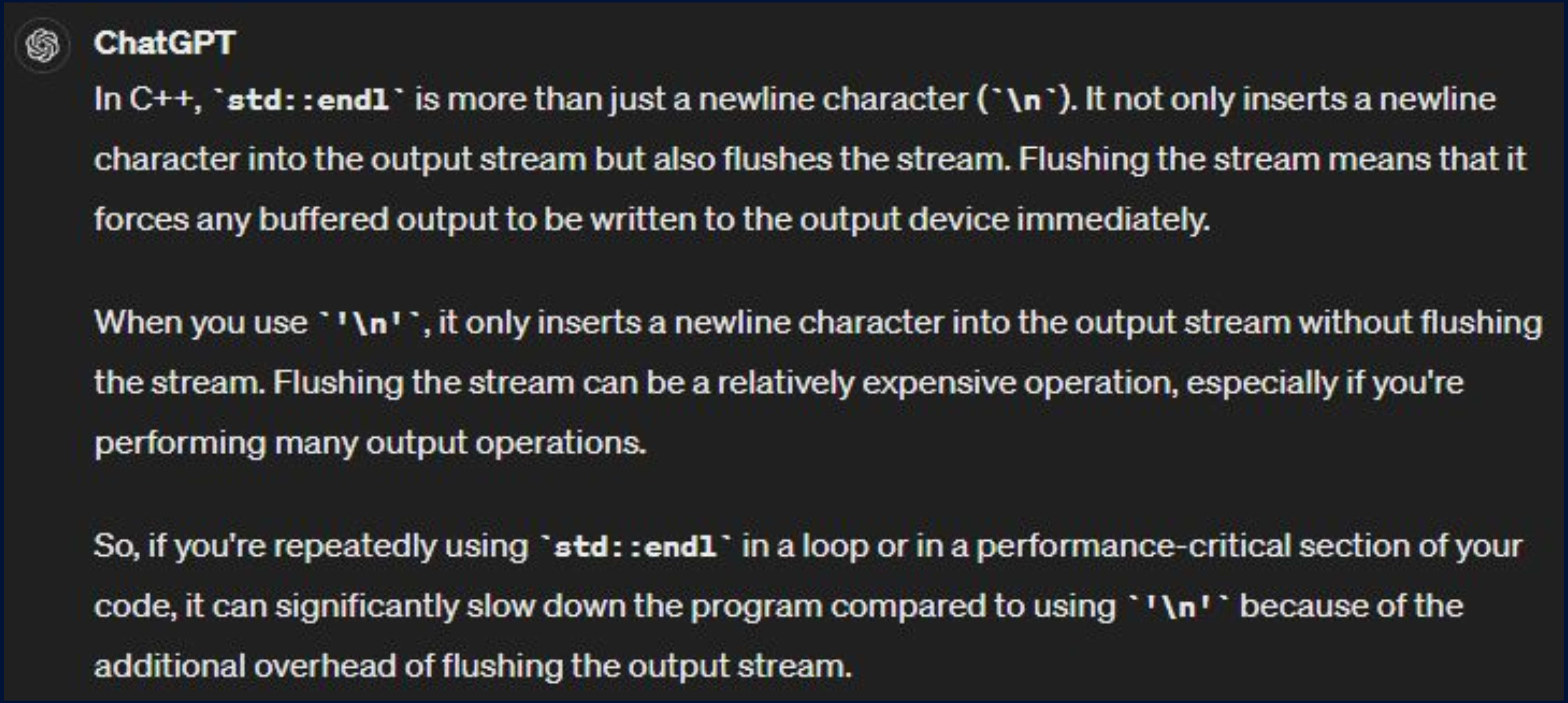


Result: CORRECT Testcase runs: ✓✓|✓✓✓✓✓✓✓✓✓✓✓✓✓✓✓✓✓✓

#18, name: 18, runtime: 3.117s, result: correct

After changing endline to “\n”

Why



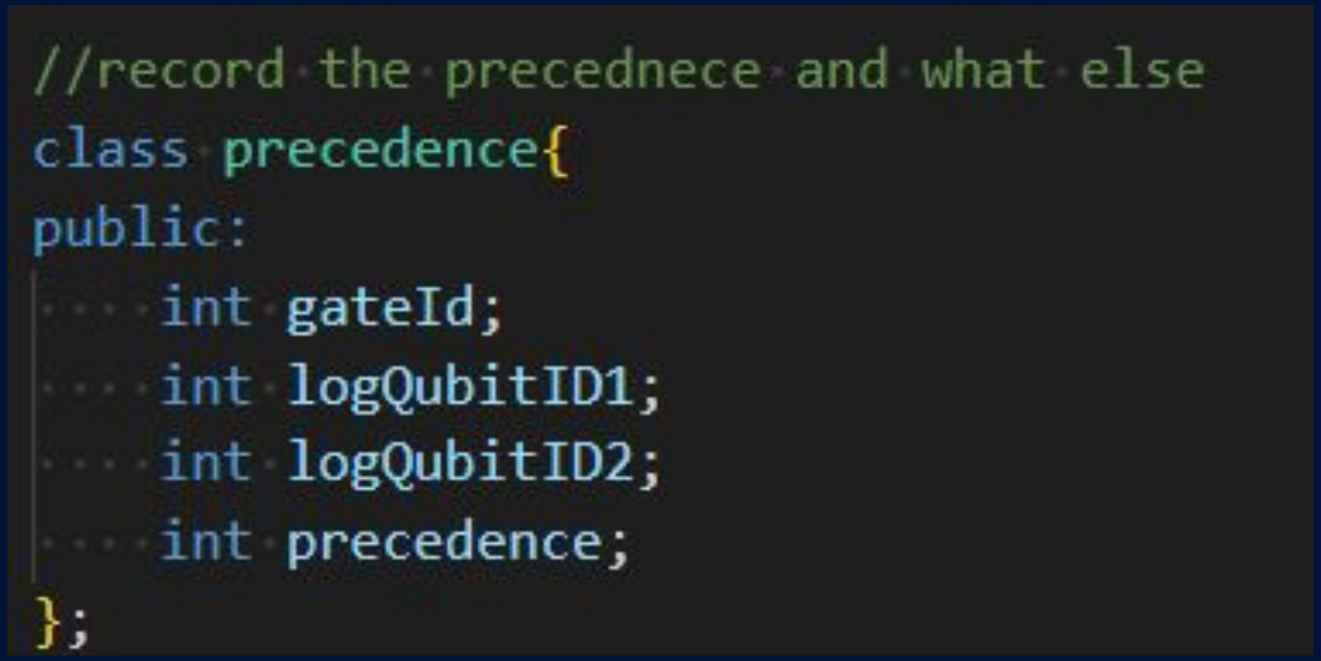
ChatGPT

In C++, `std::endl` is more than just a newline character (`\n`). It not only inserts a newline character into the output stream but also flushes the stream. Flushing the stream means that it forces any buffered output to be written to the output device immediately.

When you use `'\n'`, it only inserts a newline character into the output stream without flushing the stream. Flushing the stream can be a relatively expensive operation, especially if you're performing many output operations.

So, if you're repeatedly using `std::endl` in a loop or in a performance-critical section of your code, it can significantly slow down the program compared to using `'\n'` because of the additional overhead of flushing the output stream.

How did i do mapping?



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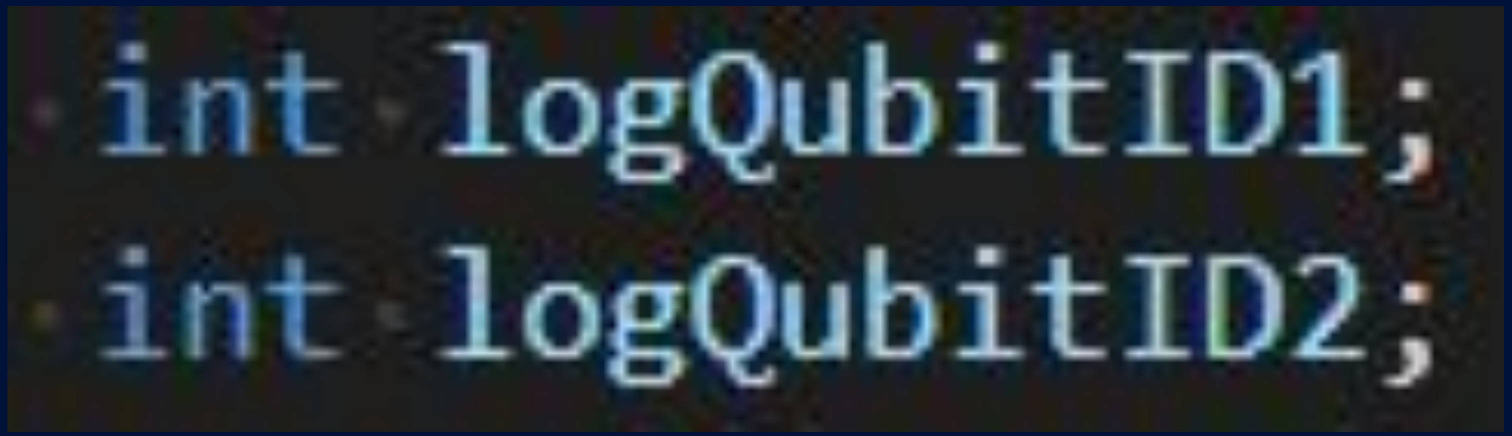
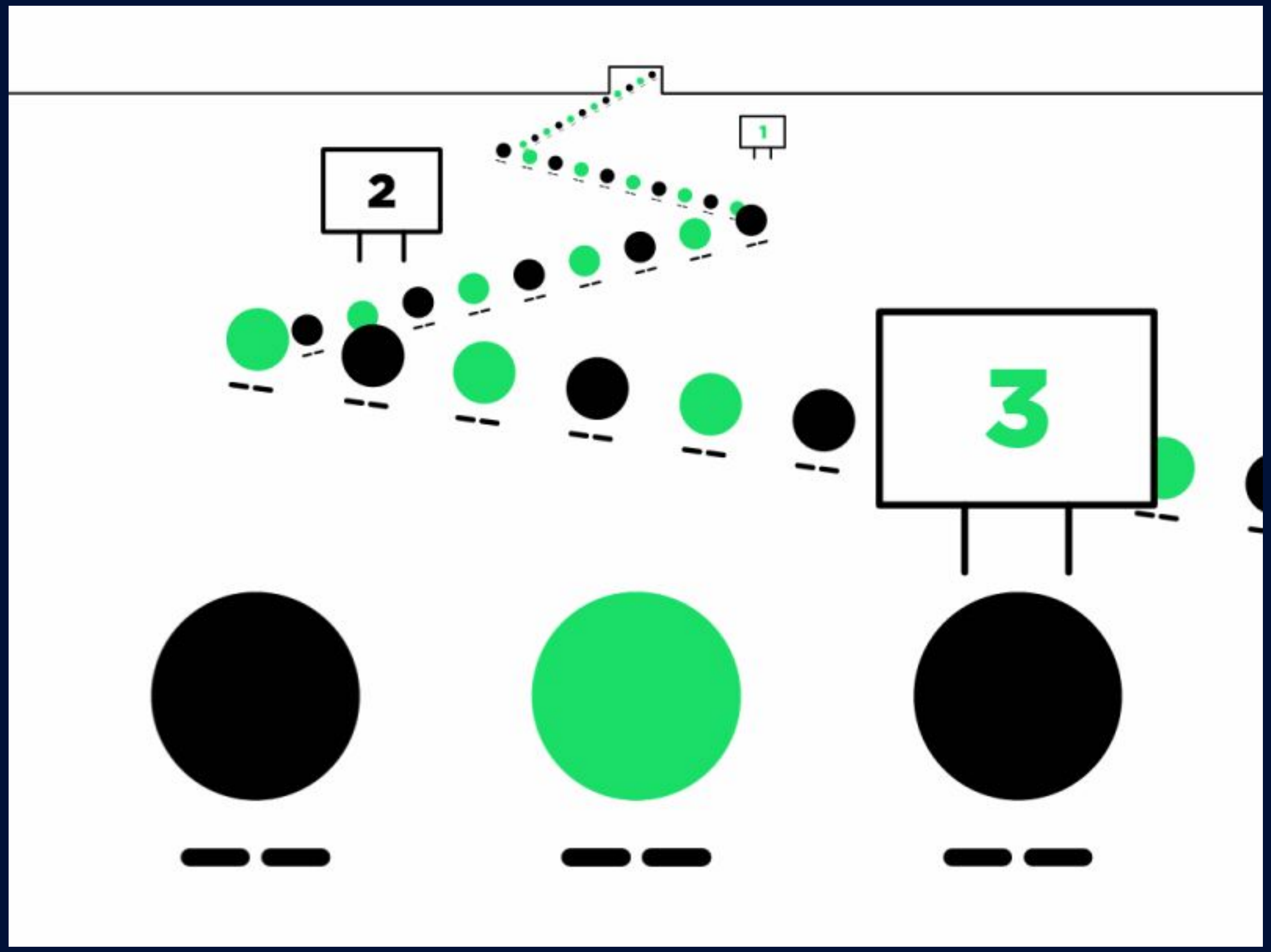
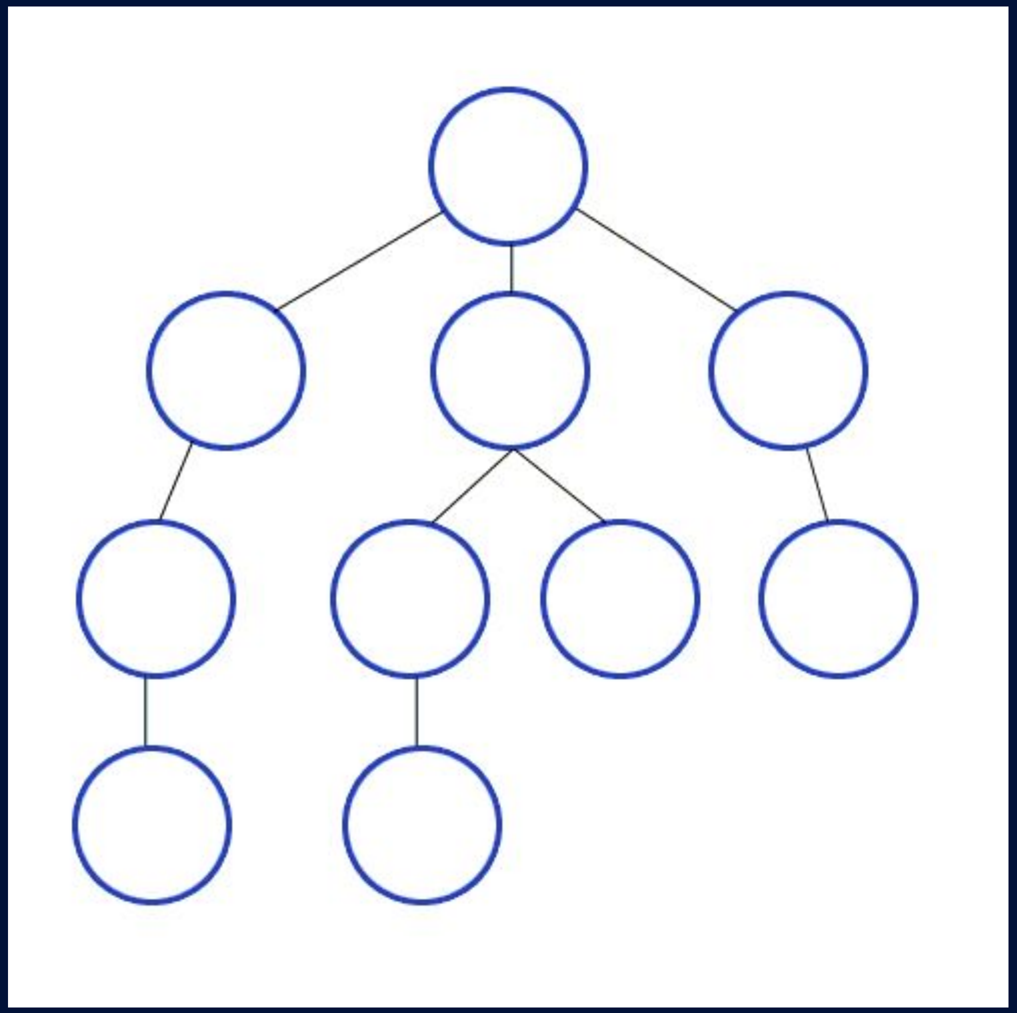


```
int logQubitID1;
int logQubitID2;
```

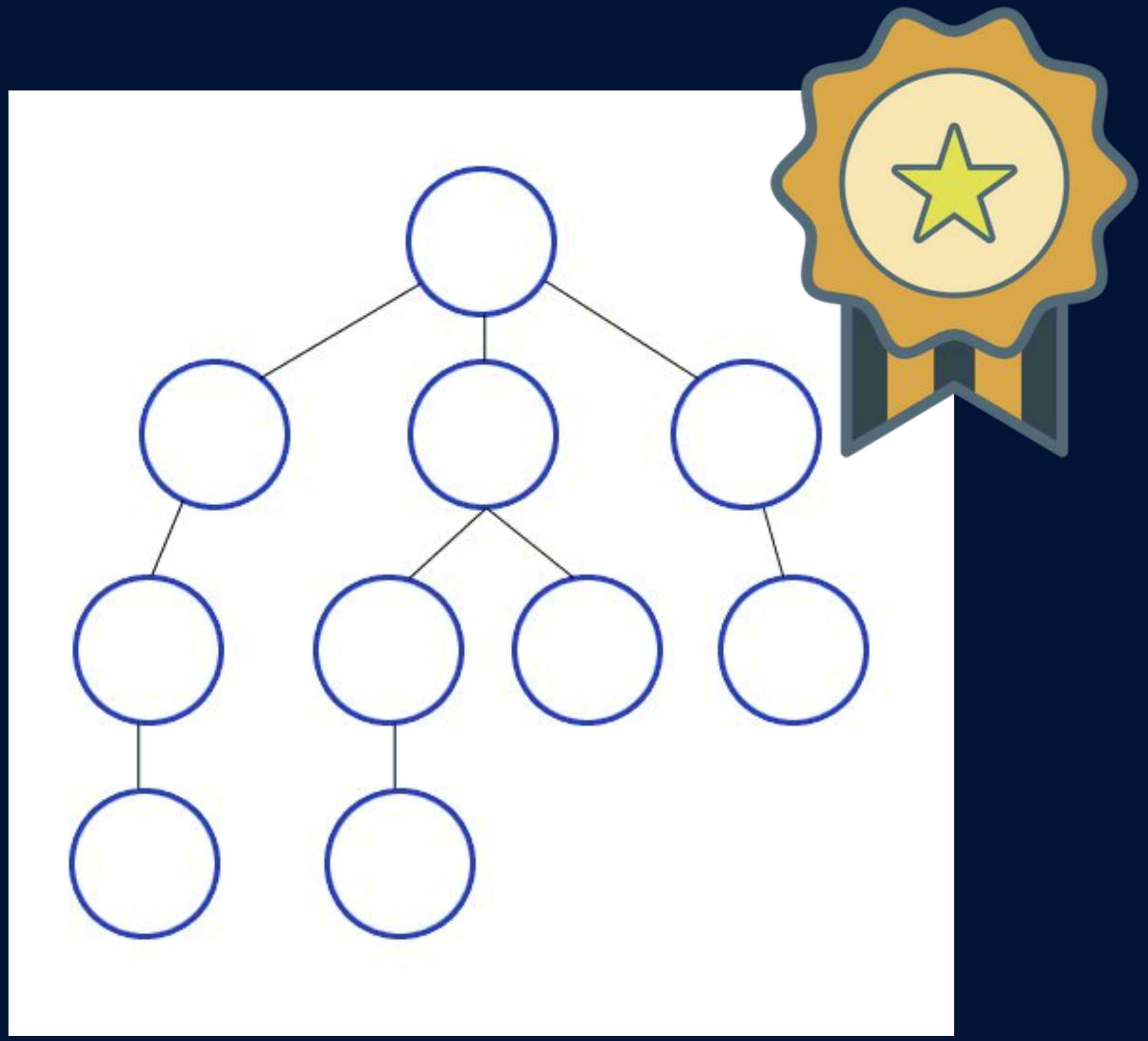
put logQuibit to the queue



Choosing Bfs or Dfs to initialize?



BFS



DFS

Be Better

1.Do the easy connection first

2.Put those busy node together

3.Improve topological sort precedence

Thanks For Attention