

Building H2O (/problems/building-h2o/)

Submission Detail

11 / 11 test cases passed.

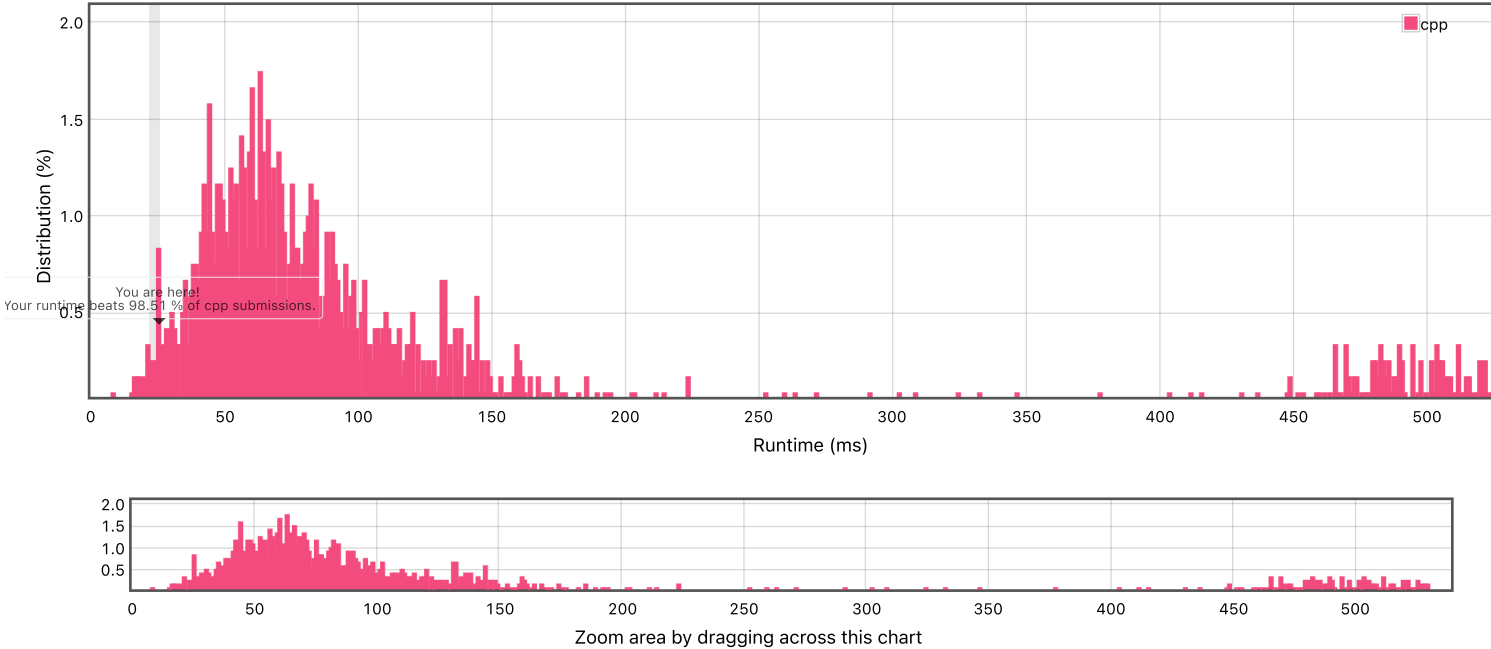
Runtime: **24 ms**

Memory Usage: **8.8 MB**

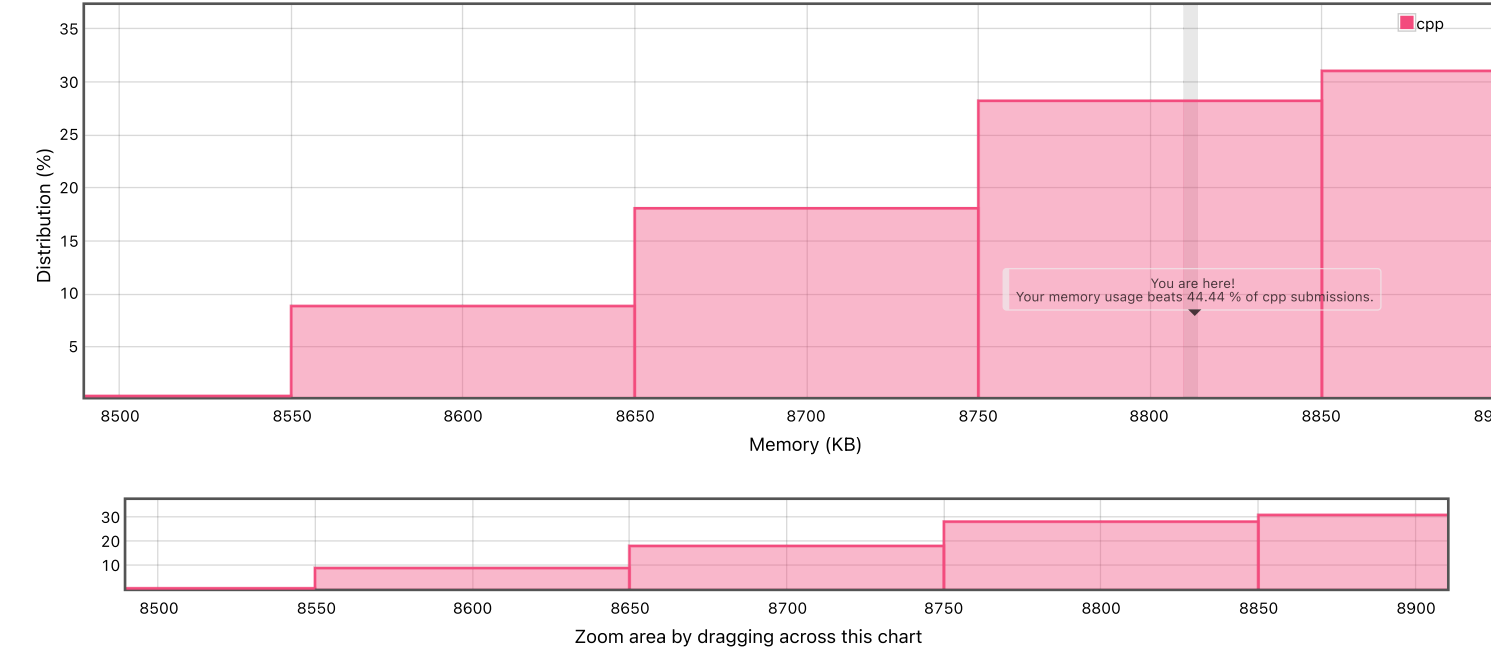
Status: **Accepted**

Submitted: **3 days, 6 hours ago**

Accepted Solutions Runtime Distribution



Accepted Solutions Memory Distribution



Invite friends to challenge **Building H2O**

Submitted Code: 3 days, 6 hours ago


Language: cpp

[Edit Code](#)

```
1 class H2O {
2 private:
3     //limiters for atoms inside molecule
4     const int h2 = 2;
5     const int o1 = 1;
6     //mutex and variables with limited access by it
7     mutex mtx;
8     int h = 0;
9     int o = 0;
10    condition_variable cv;
11    //check if the molecule is complete. Reset for another one.
12    void check_set() {
13        if (h == h2 && o == o1){
14            h = 0;
15            o = 0;
16        }
17    }
18 public:
19    H2O() {
20    }
21
22    void hydrogen(function<void()> releaseHydrogen) {
23        unique_lock<mutex> ulck(mtx);
24        //barrier
25        cv.wait(ulck, [=] {return h < h2;});
26        //critical section
27        // releaseHydrogen() outputs "H". Do not change or remove this line.
28        releaseHydrogen();
29        h++;
30        check_set();
31        //make resource available to other threads
32        cv.notify_all();
33    }
34
35    void oxygen(function<void()> releaseOxygen) {
36        unique_lock<mutex> ulck(mtx);
37        //barrier
38        cv.wait(ulck, [=] {return o < o1;});
39        //critical section
40        // releaseOxygen() outputs "O". Do not change or remove this line.
41        releaseOxygen();
42        o++;
43        check_set();
44        //make resource available to other threads
45        cv.notify_all();
46    }
47 };
```

[Back to problem \(/problems/building-h2o/\)](/problems/building-h2o/)

Copyright © 2022 LeetCode

[Help Center \(/support/\)](/support/) | [Jobs \(/jobs/\)](/jobs/) | [Bug Bounty \(/bugbounty/\)](/bugbounty/) | [Online Interview \(/interview/\)](/interview/) | [Students \(/student/\)](/student/) | [Terms \(/terms/\)](/terms/) | [Privacy Policy \(/privacy/\)](/privacy/) [United States \(/region/\)](/region/)