

# Screenshots of my output from code.

4 test cases output.

## INPUT CASE

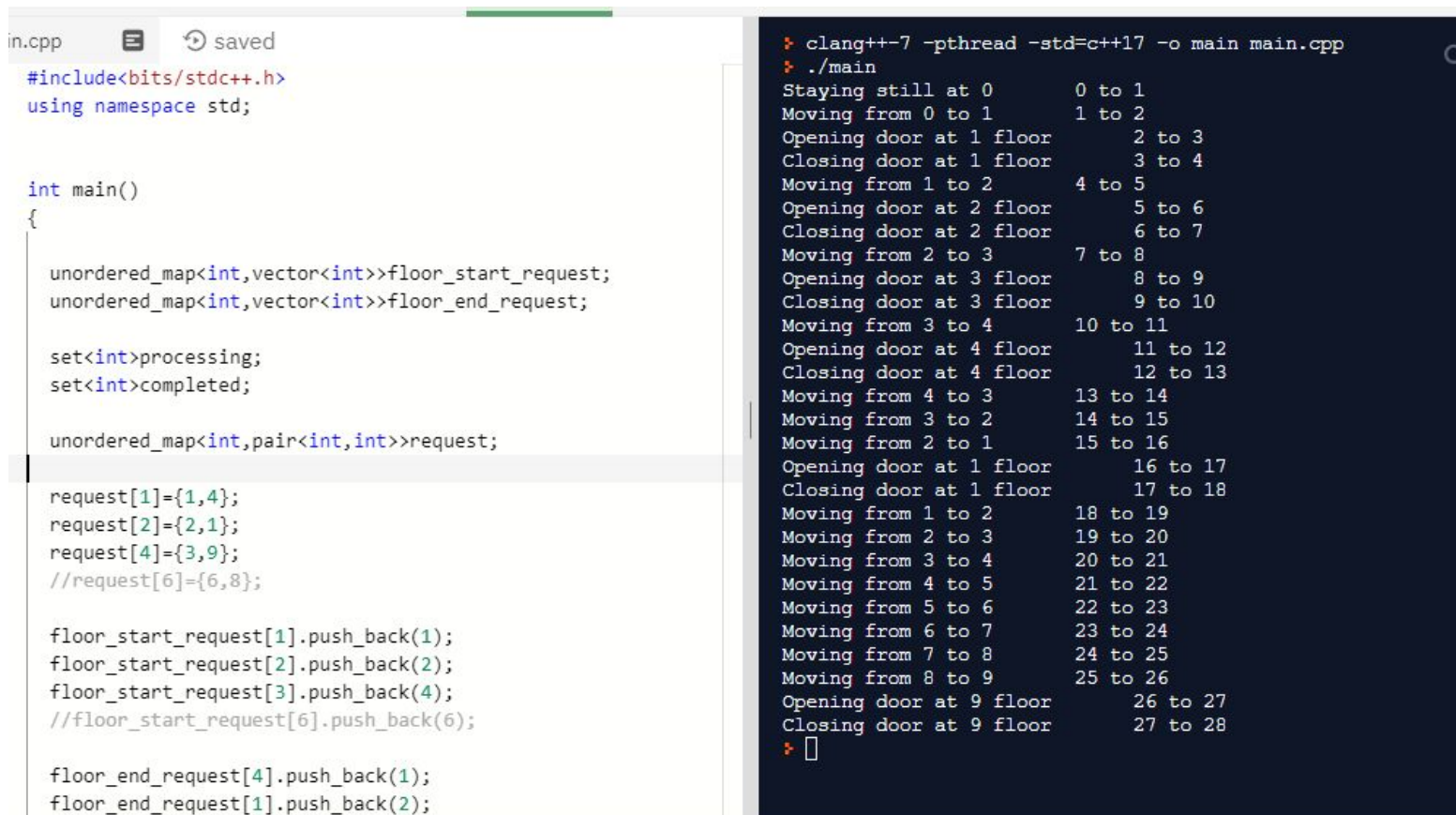
1. Request an Elevator: [<TIME\_INSTANCE>,<FLOOR>,<DESTINATION\_FLOOR>]

**Time, floor, Destination\_floor**

[1, 1, 4]

[2, 2, 1]

[4, 3, 9]



The image shows a C++ code editor on the left and a terminal window on the right. The code in the editor is a C++ program that simulates an elevator system. It uses unordered maps to store requests and sets to track processing and completion. The terminal output shows the execution of the program, displaying the sequence of events: staying still, moving between floors, opening and closing doors, and the time intervals for each action.

```
in.cpp  saved
#include<bits/stdc++.h>
using namespace std;

int main()
{
    unordered_map<int,vector<int>>floor_start_request;
    unordered_map<int,vector<int>>floor_end_request;

    set<int>processing;
    set<int>completed;

    unordered_map<int,pair<int,int>>request;

    request[1]={1,4};
    request[2]={2,1};
    request[4]={3,9};
    //request[6]={6,8};

    floor_start_request[1].push_back(1);
    floor_start_request[2].push_back(2);
    floor_start_request[3].push_back(4);
    //floor_start_request[6].push_back(6);

    floor_end_request[4].push_back(1);
    floor_end_request[1].push_back(2);
}
```

```
> clang++-7 -pthread -std=c++17 -o main main.cpp
> ./main
Staying still at 0      0 to 1
Moving from 0 to 1      1 to 2
Opening door at 1 floor 2 to 3
Closing door at 1 floor 3 to 4
Moving from 1 to 2      4 to 5
Opening door at 2 floor 5 to 6
Closing door at 2 floor 6 to 7
Moving from 2 to 3      7 to 8
Opening door at 3 floor 8 to 9
Closing door at 3 floor 9 to 10
Moving from 3 to 4      10 to 11
Opening door at 4 floor 11 to 12
Closing door at 4 floor 12 to 13
Moving from 4 to 3      13 to 14
Moving from 3 to 2      14 to 15
Moving from 2 to 1      15 to 16
Opening door at 1 floor 16 to 17
Closing door at 1 floor 17 to 18
Moving from 1 to 2      18 to 19
Moving from 2 to 3      19 to 20
Moving from 3 to 4      20 to 21
Moving from 4 to 5      21 to 22
Moving from 5 to 6      22 to 23
Moving from 6 to 7      23 to 24
Moving from 7 to 8      24 to 25
Moving from 8 to 9      25 to 26
Opening door at 9 floor 26 to 27
Closing door at 9 floor 27 to 28
> □
```

2. Request an Elevator: [<TIME\_INSTANCE>,<FLOOR>,<DESTINATION\_FLOOR>]

Time, floor, Destination\_floor

[2, 3, 4]

[4, 5, 6]

[19, 7, 6]

main.cpp saved

```
1 #include<bits/stdc++.h>
2 using namespace std;
3
4
5 int main()
6 {
7
8     unordered_map<int,vector<int>>floor_start_request;
9     unordered_map<int,vector<int>>floor_end_request;
10
11     set<int>processing;
12     set<int>completed;
13
14     unordered_map<int,pair<int,int>>request;
15
16     request[2]={3,4};
17     request[4]={5,6};
18     request[19]={7,6};
19     //request[6]={6,8};
20
21     floor_start_request[3].push_back(2);
22     floor_start_request[5].push_back(4);
23     floor_start_request[7].push_back(19);
24     //floor_start_request[6].push_back(6);
25
26     floor_end_request[4].push_back(2);
27     floor_end_request[6].push_back(4);
```

```
clang++-7 -pthread -std=c++17 -o main main.cpp
./main
Staying still at 0      0 to 1
Staying still at 0      1 to 2
Moving from 0 to 1      2 to 3
Moving from 1 to 2      3 to 4
Moving from 2 to 3      4 to 5
Opening door at 3 floor 5 to 6
Closing door at 3 floor 6 to 7
Moving from 3 to 4      7 to 8
Opening door at 4 floor 8 to 9
Closing door at 4 floor 9 to 10
Moving from 4 to 5      10 to 11
Opening door at 5 floor 11 to 12
Closing door at 5 floor 12 to 13
Moving from 5 to 6      13 to 14
Opening door at 6 floor 14 to 15
Closing door at 6 floor 15 to 16
Staying still at 6      16 to 17
Staying still at 6      17 to 18
Staying still at 6      18 to 19
Moving from 6 to 7      19 to 20
Opening door at 7 floor 20 to 21
Closing door at 7 floor 21 to 22
Moving from 7 to 6      22 to 23
Opening door at 6 floor 23 to 24
Closing door at 6 floor 24 to 25
```

3. Request an Elevator: [<TIME\_INSTANCE>,<FLOOR>,<DESTINATION\_FLOOR>]

Time, floor, Destination\_floor

[1, 0, 4]

[2, 3, 2]

[4, 3, 9]

[6, 8, 7]

main.cpp saved

```
1  #include<bits/stdc++.h>
2  using namespace std;
3
4
5  int main()
6  {
7
8      unordered_map<int,vector<int>>floor_start_request;
9      unordered_map<int,vector<int>>floor_end_request;
10
11      set<int>processing;
12      set<int>completed;
13
14      unordered_map<int,pair<int,int>>request;
15
16      request[1]={0,4};
17      request[2]={3,2};
18      request[4]={3,9};
19      request[6]={8,7};
20
21      floor_start_request[0].push_back(1);
22      floor_start_request[3].push_back(2);
23      floor_start_request[3].push_back(4);
24      floor_start_request[8].push_back(6);
25
26      floor_end_request[4].push_back(1);
27      floor_end_request[2].push_back(2);
```

```
> clang++-7 -pthread -std=c++17 -o main main.cpp
> ./main
Staying still at 0      0 to 1
Opening door at 0 floor 1 to 2
Closing door at 0 floor 2 to 3
Moving from 0 to 1      3 to 4
Moving from 1 to 2      4 to 5
Moving from 2 to 3      5 to 6
Opening door at 3 floor 6 to 7
Closing door at 3 floor 7 to 8
Moving from 3 to 4      8 to 9
Opening door at 4 floor 9 to 10
Closing door at 4 floor 10 to 11
Moving from 4 to 3      11 to 12
Moving from 3 to 2      12 to 13
Opening door at 2 floor 13 to 14
Closing door at 2 floor 14 to 15
Moving from 2 to 3      15 to 16
Moving from 3 to 4      16 to 17
Moving from 4 to 5      17 to 18
Moving from 5 to 6      18 to 19
Moving from 6 to 7      19 to 20
Moving from 7 to 8      20 to 21
Opening door at 8 floor 21 to 22
Closing door at 8 floor 22 to 23
Moving from 8 to 9      23 to 24
Opening door at 9 floor 24 to 25
Closing door at 9 floor 25 to 26
Moving from 9 to 8      26 to 27
Moving from 8 to 7      27 to 28
Opening door at 7 floor 28 to 29
Closing door at 7 floor 29 to 30
> □
```

4. Request an Elevator: [<TIME\_INSTANCE>,<FLOOR>,<DESTINATION\_FLOOR>]

Time, floor, Destination\_floor

[1, 1, 6]

[2, 3, 5]

[4, 5, 4]

[6, 5, 9]

[8, 7, 9]

```
main.cpp  saved
1  #include<bits/stdc++.h>
2  using namespace std;
3
4
5  int main()
6  {
7
8      unordered_map<int,vector<int>>floor_start_request;
9      unordered_map<int,vector<int>>floor_end_request;
10
11      set<int>processing;
12      set<int>completed;
13
14      unordered_map<int,pair<int,int>>request;
15
16      request[1]={1,6};
17      request[2]={3,5};
18      request[4]={5,4};
19      request[6]={5,9};
20      request[8]={7,9};
21
22      floor_start_request[1].push_back(1);
23      floor_start_request[3].push_back(2);
24      floor_start_request[5].push_back(4);
```

```
clang++-7 -pthread -std=c++17 -o main main.cpp
./main
Staying still at 0      0 to 1
Moving from 0 to 1      1 to 2
Opening door at 1 floor 2 to 3
Closing door at 1 floor 3 to 4
Moving from 1 to 2      4 to 5
Moving from 2 to 3      5 to 6
Opening door at 3 floor 6 to 7
Closing door at 3 floor 7 to 8
Moving from 3 to 4      8 to 9
Moving from 4 to 5      9 to 10
Opening door at 5 floor 10 to 11
Closing door at 5 floor 11 to 12
Moving from 5 to 6      12 to 13
Opening door at 6 floor 13 to 14
Closing door at 6 floor 14 to 15
Moving from 6 to 5      15 to 16
Moving from 5 to 4      16 to 17
Opening door at 4 floor 17 to 18
Closing door at 4 floor 18 to 19
Moving from 4 to 5      19 to 20
Moving from 5 to 6      20 to 21
Moving from 6 to 7      21 to 22
Opening door at 7 floor 22 to 23
Closing door at 7 floor 23 to 24
Moving from 7 to 8      24 to 25
Moving from 8 to 9      25 to 26
Opening door at 9 floor 26 to 27
Closing door at 9 floor 27 to 28
```