

C++ Programming

STL Queue

Mostafa S. Ibrahim

Teaching, Training and Coaching since more than a decade!

Artificial Intelligence & Computer Vision Researcher

PhD from Simon Fraser University - Canada

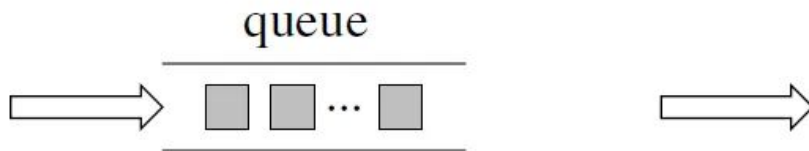
Bachelor / Msc from Cairo University - Egypt

Ex-(Software Engineer / ICPC World Finalist)



Queue

- Recall the Queue Structure we built
 - First in first out strategy (FIFO)
 - How many projects might need it? A lot
 - So STL provides us for an implementation for it
- But we need queue for several data types: Integer, Double, Employees?
 - Use C++ templates
 - `queue<int> q_int;`
 - `queue<employee> q_empl;`
- What does it support?
 - Push (to add element)
 - Front (to get top element)
 - Empty (to know if empty())
 - Size(): How many elements?



Queue

```
1 #include<iostream>
2 #include<queue>
3 using namespace std;
4
5 int main() {
6     queue<int> q;
7     q.push(10);
8     q.push(20);
9     q.push(30);
10 }
```

Printing Queue

```
10
11     cout << "Last element in Queue: " << q.back() << "\n";
12
13     cout << "Queue elements: ";
14     while (!q.empty()) {
15         cout << q.front() << " ";
16         q.pop();
17     }
18     cout << "\n";
19
20     queue<string> q_names;
21     q_names.push("mostafa");
22     string name = q_names.front();
23
24     return 0;
25 }
```

Problems Tasks Console Properties Call Graph Search

<terminated> ztemp [C/C++ Application] /home/moustafa/workspaces/eclipse

Last element in Queue: 30

Queue elements: 10 20 30

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”