

182 , 987 , 000

2.00E+08

1.50E+08

1.00E+08

5.00E+07

0.00E+00

items/s



```
template<typename T>
class queue
{
public:
    queue (size_t capacity_)
        : capacity (capacity_)
    {
    }

    bool try_push (const T& v);
    bool try_pop (T& v);

private:
    size_t capacity = 0;
    std::vector<T> data { std::vector<T> (capacity) };
    size_t head { 0 }, tail { 0 };

    size_t next_index (size_t current) const {
        return (current + 1) % capacity;
    }
};
```

```
bool try_push (const T& v)
{
    size_t current_tail = tail;
    size_t next_tail = next_index (current_tail);

    if (next_tail == head)
        return false;

    data[current_tail] = v;
    tail = next_tail;
    return true;
}

bool try_pop (T& v)
{
    size_t current_head = head;

    if (current_head == tail)
        return false;

    v = data[current_head];
    head = next_index (current_head);
    return true;
}
```