

Exercise 3: Queue data structure with array

a. Pseudo-code:

```
queue[] // queue is array
tail = 0 // store index of tail
head = 0 // store index of head

function empty():
    return (head >= tail)

function size():
    return tail - head

function push(x):
    queue[tail++] = x

function pop():
    ++head

function front():
    return queue[head]
```

b. Complexity: $O(1)$ each operator