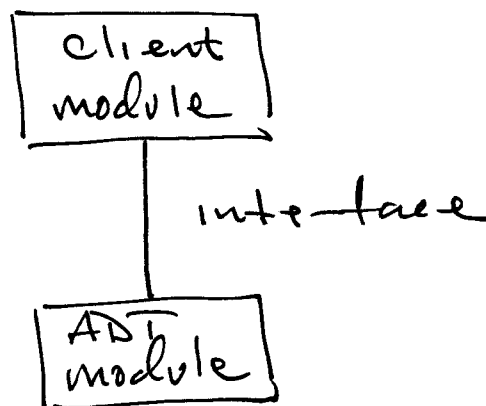


note:

ADT operations must have their
Preconditions stated in terms
of access function calls.



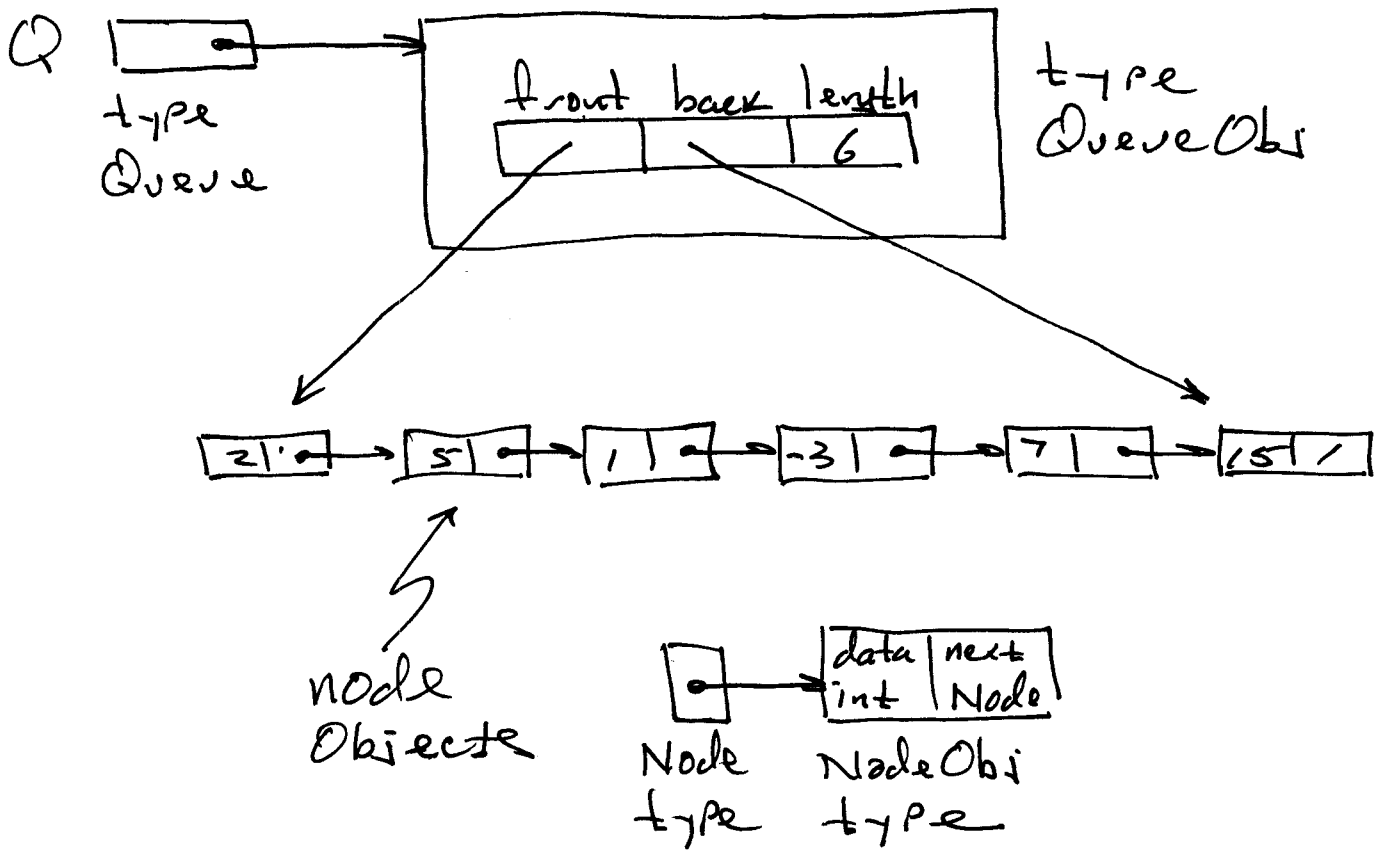
Queue ADT

client Picture

Q = (2, 5, 1, -3, 7, 15)

↑
↑
 front
 back

interior view:



typedef struct:

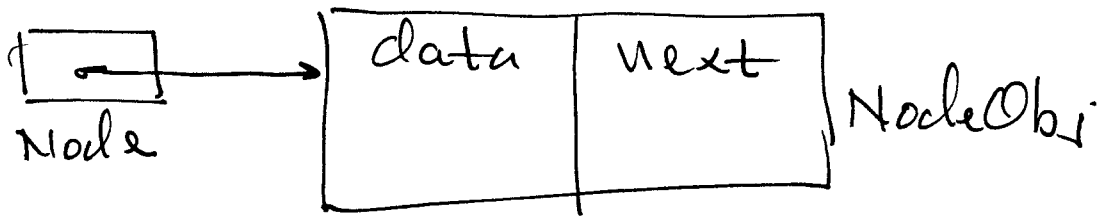
typedef Δ $\overline{B}$;
 existing type alias for A

Node in Queue ADT

typedef struct NodeObj {
 int data;
 struct NodeObj * next;
} NodeObj ;
 ↑
 B

← A

typedef NodeObj* Node ;
 ↑ ↑
 A B



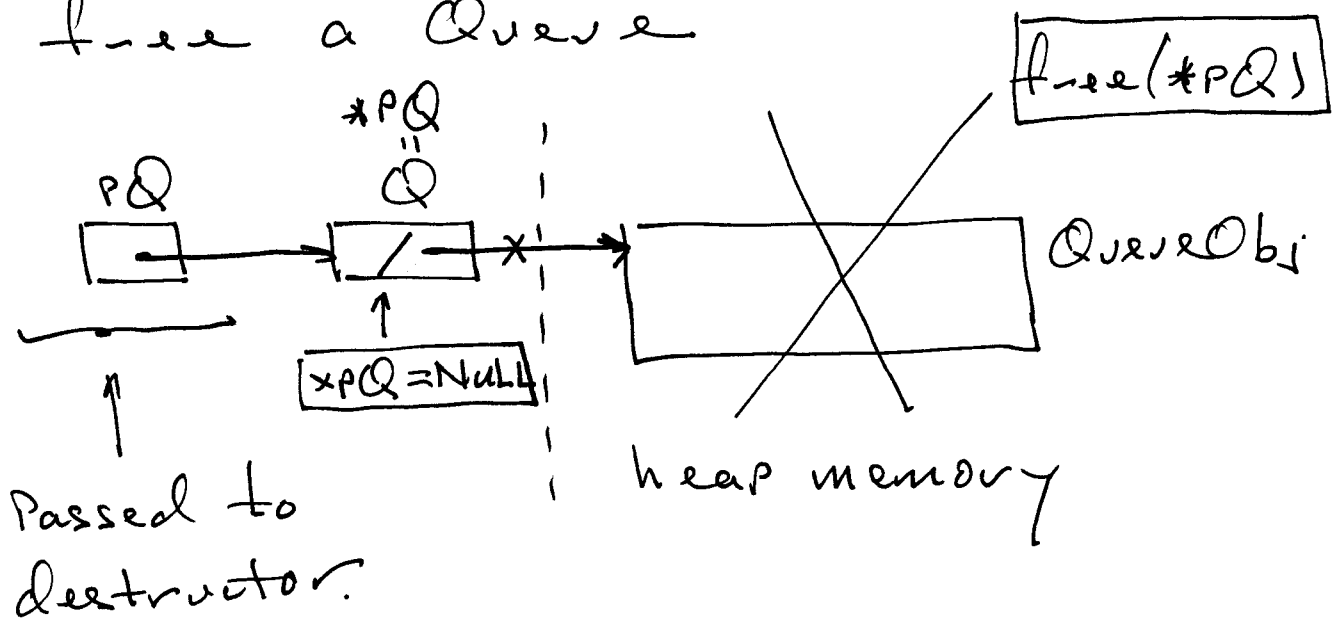
note:

$Q \rightarrow \text{front}$

same as

$(*Q). \text{front}$

To free a Queue



why?

add level of indirection necessary
so freeQueue() can set $Q = \text{NULL}$.

Pal Example

how to insert array indices into a list so as to indirectly sort array.

client view:

	0 ✓	1 ✓	2 ✓	3
A	"c"	"a"	"b"	"d"

want

$$L = (1, 2, 0, 3)$$

start $L = ()$

insert 0 : $L = (\underline{0})$

c

insert 1 : $L = (1, \underline{0})$

a, c

insert 2 : $L = (1, 2, \underline{0})$

a, b, c

insert 3 : $L = (1, 2, 0, 3)$

a, b, c, d

Quiz Prep.

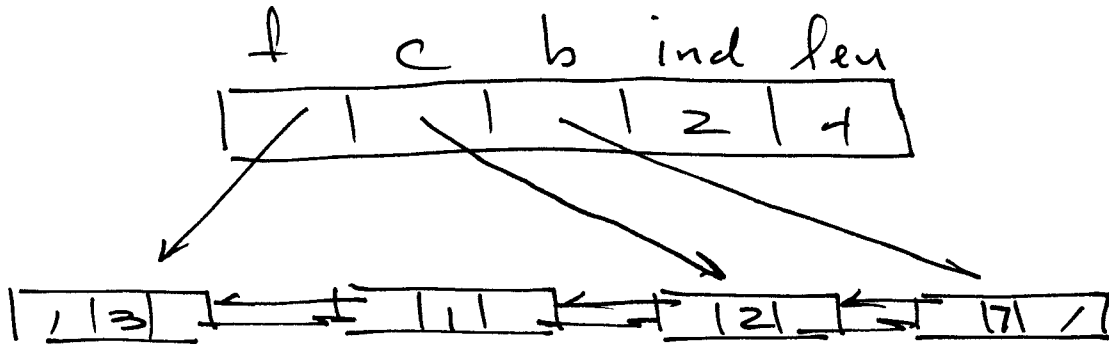
using List ADT from Pal.

- ① swap 2 elements in a list
- ② reverse a list
- ③ reverse a portion of list from ind a to ind b
- ④ concat 2 lists.
- ⑤ return true (1) or false (0) depending on whether L is a palindrome.

cursor in Pa 1:

• client view (3, 1, 2, 7)

• interior view



move next()

• client (3, 1, 2, 7)

