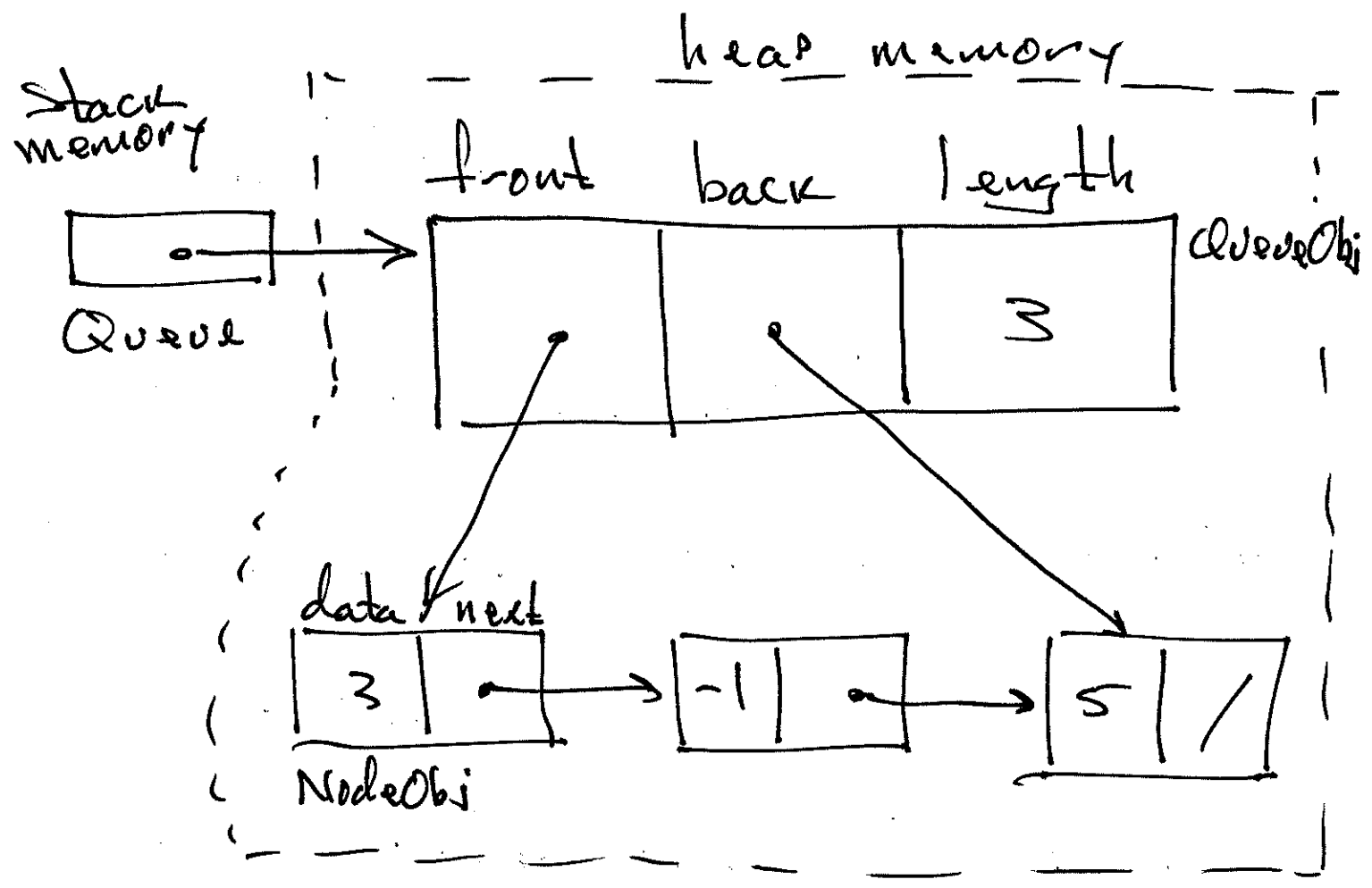


## Preconditions

ADT operations must

- test its own pre. conditions first.
- if isolated print to stderr
  - module? `fprintf(stderr, ...)`
  - operation?
  - precondition?
- then quit program  
`exit(EXIT_FAILURE);`

# Inside of Queue ADT!



Client view! (3, -1, 5)

how does typedef work?

```
typedef A B;
```

existing type

new type, alias to existing type.

Ex Node - NodeObj

```

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

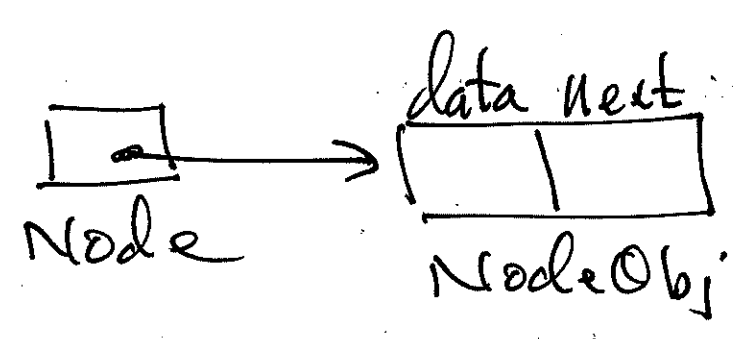
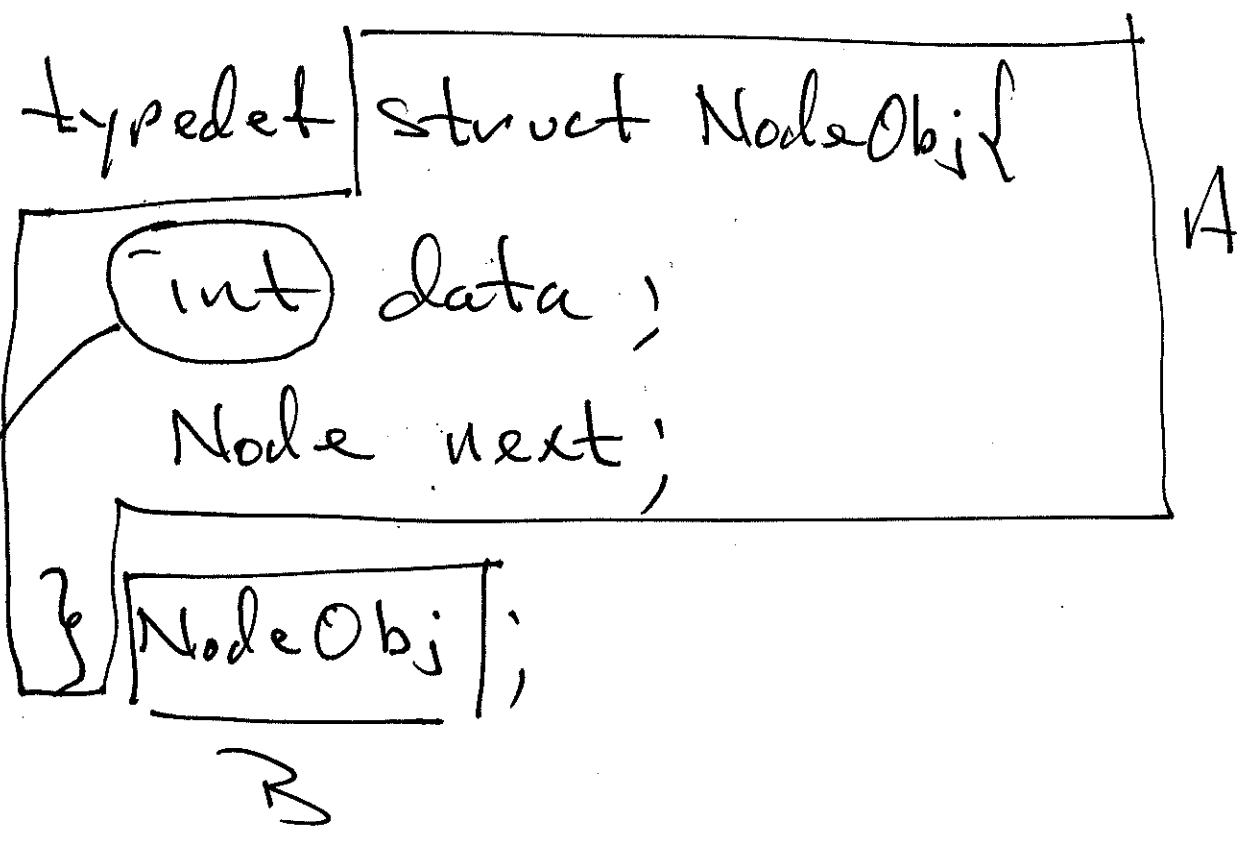
```

A

B

```
typedef NodeObj * Node;
```

Or • typedef struct NodeObj\* Node;



→ QueueElement !

typedef int QueueElement;

# In Queue.c

```
typedef struct QueueObj {  
    Node front;  
    Node back;  
    int length;  
} QueueObj;
```

# In Queue.h

```
typedef QueueObj* Queue;
```

struct

# Empty state

client view: ( )

inside view:

