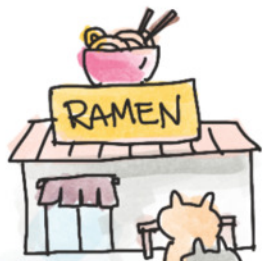
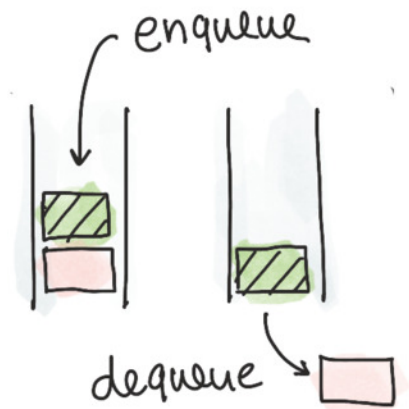


# Data Structures

## Stack & Queue

A queue is a FIFO (First-in-First-out) data structure, where an element added first (= enqueue) gets removed first (= dequeue)



just like waiting in line at a popular restaurant!



☆ Stack as an array in JS

```
let queue = [ ];
```

```
queue.push('Simba'); // ['Simba']
```

```
queue.push('Nyan'); // ['Simba', 'nyan']
```

```
queue.push('maru'); // ['Simba', 'Nyan', 'maru']
```

```
let eater = queue.shift(); // eater is 'Simba'
```

Time Complexity should be  $O(1)$  for both enqueue + dequeue but JS `shift()` is slower!

if you `queue.unshift('bad Kitty')`, instead of `push()`, then the cat cuts in to the front of line!

Wrong!