Stack and recursive method

There are several situations when recursive methodas are quite handy

- It is an abstract data type (interface)
- Basic operations: enqueue() and dequeue() , peek()
- FIFO structure: first in first out
- It can be implemented with dynamic arrays as well as with linked lists
- Important when implementing BFS algorithm for graphs

Enqueue

We just simply add the new item to the end of the queue O(1)

```
queue.enqueue(10)
```

Dequeue

We just simply remove the item starting at the beginning of the queue // FIFO structure

```
queue.dequeue()
```

Applications

- When a resource is shared with several consumers (threads): we

store them in a queue

- For example: CPU scheduling
- When data is transferred asynchronously (data not necessarily received at same rate as sent) between two processes
- For example: IO buffers
- Operational research applications or stochastic models relies heavily on queues !!!

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