

DSA using Python

Deque



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Agenda

- ① Variations of queue
- ② What is a deque?
- ③ Operations on deque
- ④ Implementation of deque

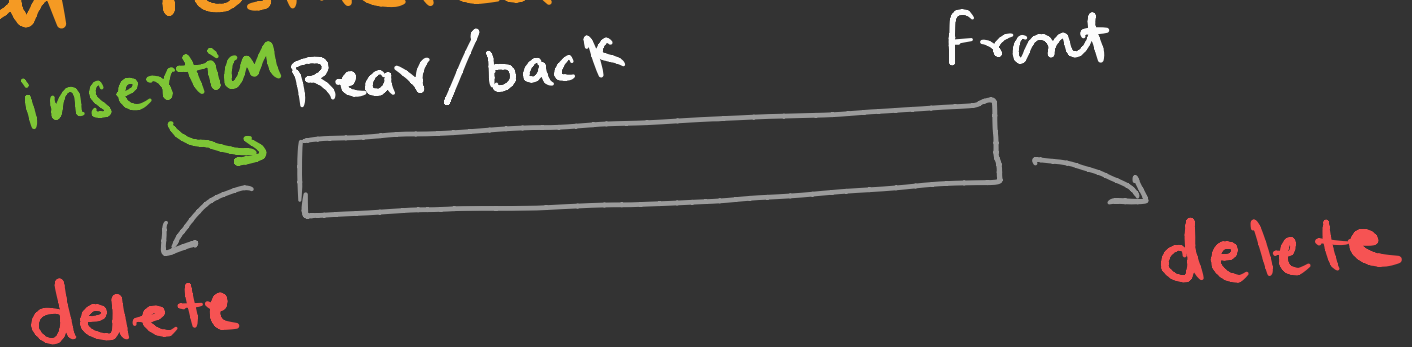
Queue

A queue is an ordered list in which insertions are done at one end (rear or back) and deletions are done at other end (front)

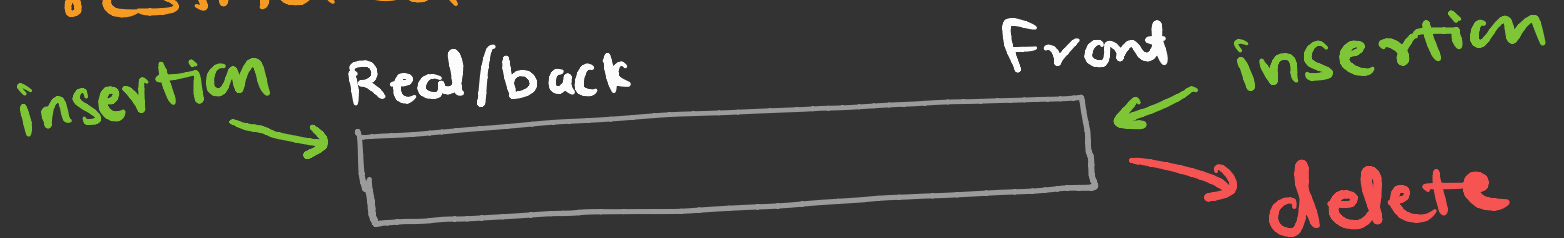
Working principle is First In First Out

Variations of Queue

- Insertion restricted

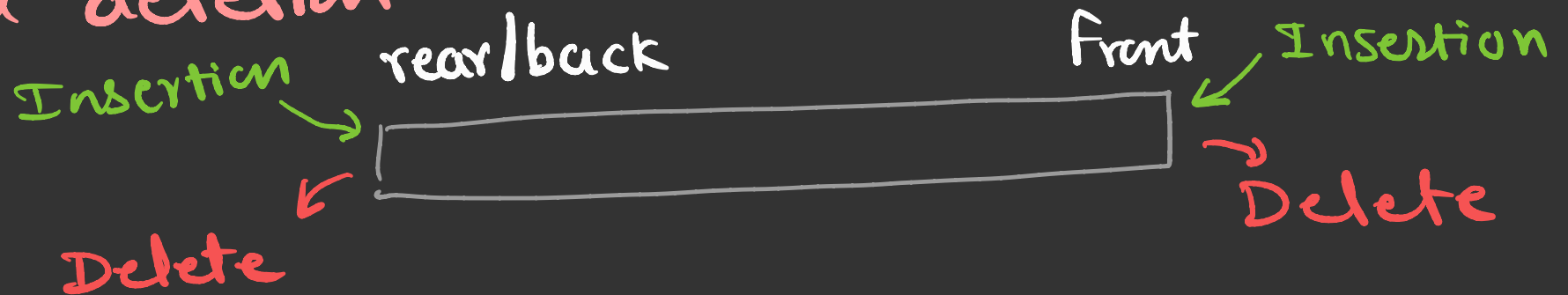


- Deletion restricted



Deque

- Deque is another variation of queue
- Deque is Double-Ended-Queue
- Deque is a linear data structure
- Both ends can be used for insertion and deletion



- Some deques may support random access, depending on implementation

Operations on Deque

insert_front

insert_rear

delete_front

delete_rear

get_front

get_rear

is_empty

size

Implementation of Deque

- ①[★] using list
- ② by extending list class
- ③ using doubly linked list class
- ④ by extending doubly linked list class
- ⑤[★] using linked list concept