Queue

The queue data structure is a sequential collection of elements that follows the principle of First In First Out (FIFO)

The first element inserted into the queue is first element to be removed

A queue of people. People enter the queue at one end (rear/tail) and leave the queue from the other end (front/ head).

Queue is an abstract data type. It is defined by its behavior rather than being a mathematical model
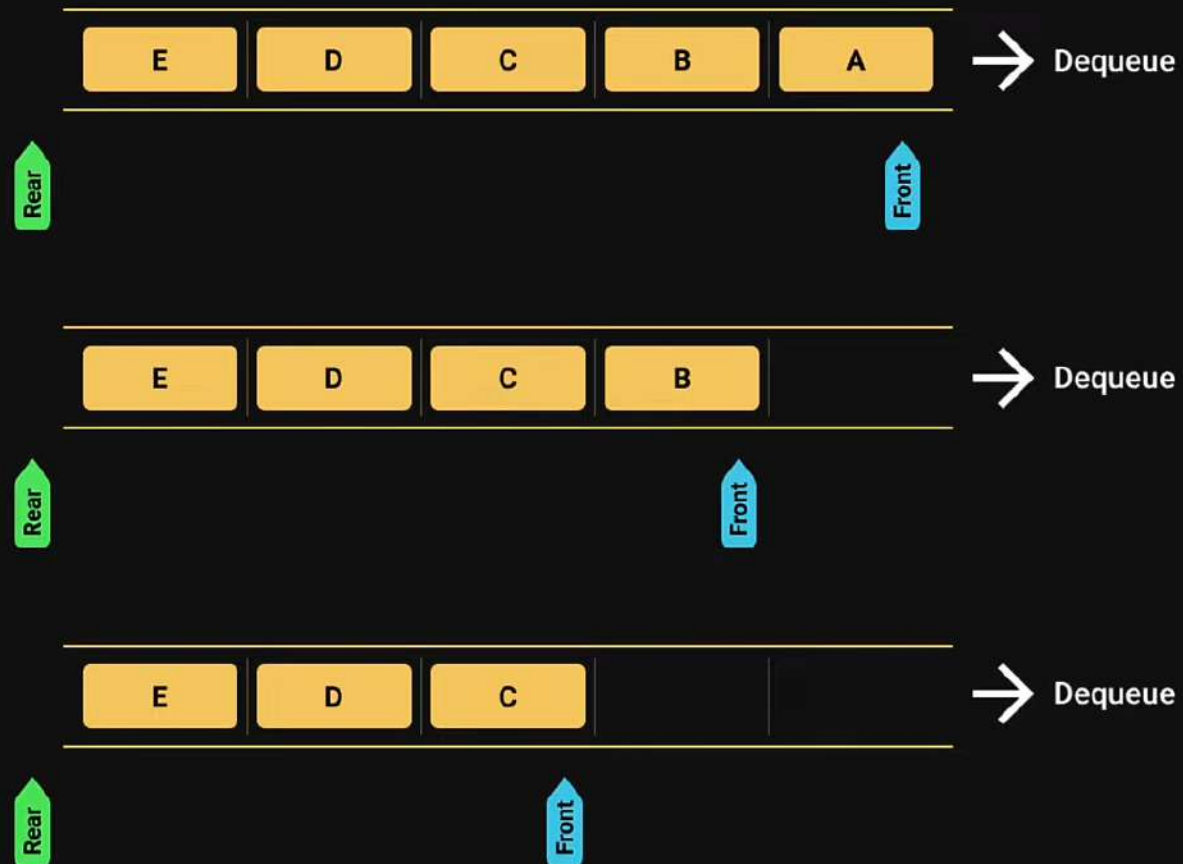
The Queue data structure supports two main operations

- Enqueue, which adds an element to the rear/tail of the collection
- Dequeue, which removes an element from the front/head of the collection

Queue Visualization - Enqueue
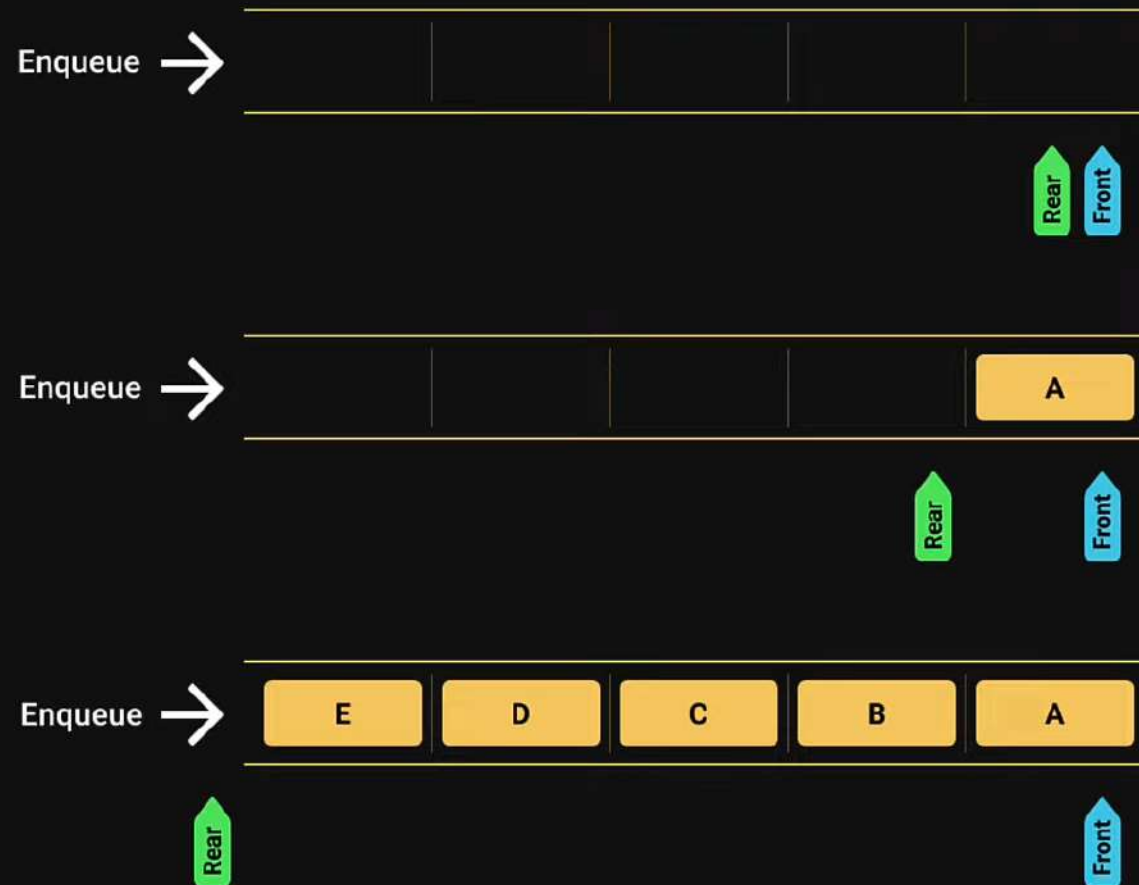
Queue Visualization - Dequeue

Queue Usage

Printers

CPU task scheduling

Callback queue in JavaScript runtime

Queue Implementation

enqueue(element) - add an element to the queue

dequeue() - remove the oldest element from the queue

peek() - get the value of the element at the front of the queue without removing it

isEmpty() - check if the queue is empty

size() - get the number of elements in the queue

print() - visualize the elements in the queue