

Why is a Queue suitable for managing treatment requests?

The queue using FIFO so first in first out. It is important to have a queue system in hospital. Because that would be fair. For example, enqueue() function of my code, adds the new element to end of the queue and dequeue() function is deletes first element. Therefore patients receive treatment in sequence.

What issues would occur if a Stack were used instead? Compare their time complexities.

If we use stack, stack using LIFO so Last In First out. Last element first out. This method would not suit our project. That would not be fair for hospital. This would not happen in real life. Because the queue is broken.

Compare of time complexities:

enqueue() is $O(1)$ Because just adds to end.

dequeue() is $O(1)$ Because just delete from head of the list.

printQueue() is $O(n)$ Because work as many the number of elements.

If we use stack functions for this Project:

push() is $O(1)$ Because just adds head.

pop() is $O(1)$ Because just delete from top of the list.

In conclusion we should use Queue methods because what is important to us be fair. So the best usage is the queue methods.