

1. NodeJS: Async Queue

As a NodeJS developer in your company, you have been given the responsibility to create a queuing system that processes the items passed to it asynchronously. This module/package will be used for processing distributed notifications in your company. Create a module `queue.js` and implement the following set of functionalities:

- The file should export a class `AsyncQueue` as the default export of the module, and it should inherit from the `EventEmitter` class.
- The class should have the following methods:
 - *enqueue*: Accepts the item as an argument and sets it to the end of the queue. Also every time an item is enqueued, the class should emit the *enqueued* event with the item that was added sent as the payload to the callback function.
 - *peek*: Returns the item at the head of the queue without removing the item.
 - *print*: Returns the items in the queue as an array.
 - *getCurrentInterval*: Returns the current interval set for dequeuing the items. Initially the default interval for dequeuing the items is set to 250ms.
 - *start*: Starts the process of dequeuing. The item at the head of the queue should be dequeued at the specified time interval. Every time an item is dequeued, emit a 'dequeued' event with the item that was dequeued sent as the payload to the callback function.
 - *pause*: Pauses the dequeuing process.
- If the queue is empty at the time the timer has expired (default: every 250ms), nothing should be dequeued and emitted, and the instance should keep listening for new items to be added without stopping.
- The class should listen for the *interval* event. The data passed is a positive number which indicates new interval value. Update the interval of processing immediately to this new interval value

▼ Test Requirements

- The `queue.js` file should export the class `AsyncQueue` as the default export of the module.
- Make sure that the items passed to the `enqueue` method are valid (Number, String, Object only).
- The default interval for dequeuing the items is set to 250ms initially.
- *Test cases take care of emitting interval* event with only positive numbers. So any kind of validation on numbers is not required.

▼ Example Implementation

```
const AsyncQueue = require('./queue');
const queue = new AsyncQueue();

queue.enqueue(3); // Queue is [3]
queue.enqueue(4); // Queue is [3, 4]
queue.enqueue(5); // Queue is [3, 4, 5]

queue.start(); // Starts the process. Every 250ms hereon, the item at head will be dequeued.

queue.on('dequeued', function (item) {
  console.log('Dequeued: ', item); // Dequeued: 3
  console.log('Next Item At Head:', queue.peek()); // Next Item At Head: 4
  console.log(queue.print()); // [4,5]
});

queue.emit('interval', 200); // Interval for dequeuing changes to 200ms.

queue.pause(); // No more items will be dequeued until start method is called again.
```