5560. Design Front Middle Back Queue

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Difficulty:	Medium

Design a queue that supports `push` and `pop` operations in the front, middle, and back.

Implement the `FrontMiddleBack` class:

- `FrontMiddleBack()` Initializes the queue.
- `void pushFront(int val)` Adds `val` to the **front** of the queue.
- `void pushMiddle(int val)` Adds `val` to the **middle** of the queue.
- `void pushBack(int val)` Adds `val` to the **back** of the queue.
- `int popFront()` Removes the **front** element of the queue and returns it. If the queue is empty, return `-1`.
- `int popMiddle()` Removes the **middle** element of the queue and returns it. If the queue is empty, return `-1`.
- `int popBack()` Removes the **back** element of the queue and returns it. If the queue is empty, return `-1`.

Notice that when there are **two** middle position choices, the operation is performed on the **frontmost** middle position choice. For example:

- Pushing `6` into the middle of `[1, 2, 3, 4, 5]` results in `[1, 2, 6, 3, 4, 5]`.
- Popping the middle from `[1, 2, 3, 4, 5, 6]` returns `3` and results in `[1, 2, 4, 5, 6]`.

Example 1:

```
Input:
["FrontMiddleBackQueue", "pushFront", "pushBack", "pushMiddle", "pushMiddle", "popFront", "popMiddle", "popMiddle", "popBack",
[[], [1], [2], [3], [4], [], [], [], [], []]
Output:
[null, null, null, null, null, 1, 3, 4, 2, -1]

Explanation:
FrontMiddleBackQueue q = new FrontMiddleBackQueue();
q.pushFront(1);   // [1]
q.pushBack(2);    // [1, 2]
q.pushMiddle(3);  // [1, 3, 2]
q.pushMiddle(4);  // [1, 4, 3, 2]
q.popFront();     // return 1 -> [4, 3, 2]
q.popMiddle();    // return 3 -> [4, 2]
q.popMiddle();    // return 4 -> [2]
q.popBack();      // return 2 -> []
q.popFront();     // return -1 -> [] (The queue is empty)
```

Constraints:

- `1 <= val <= 10`^{9}
- At most `1000` calls will be made to `pushFront`, `pushMiddle`, `pushBack`, `popFront`, `popMiddle`, and `popBack`.

JavaScript

```

var FrontMiddleBackQueue = function() {

};

/**
 * @param {number} val
 * @return {void}
 */
FrontMiddleBackQueue.prototype.pushFront = function(val) {

};

/**
 * @param {number} val
 * @return {void}
 */
FrontMiddleBackQueue.prototype.pushMiddle = function(val) {

};

/**
 * @param {number} val
 * @return {void}
 */
FrontMiddleBackQueue.prototype.pushBack = function(val) {

};

/**
 * @return {number}
 */
FrontMiddleBackQueue.prototype.popFront = function() {

};

/**
 * @return {number}
 */
FrontMiddleBackQueue.prototype.popMiddle = function() {

};

/**
 * @return {number}
 */
FrontMiddleBackQueue.prototype.popBack = function() {

};

/**
 * Your FrontMiddleBackQueue object will be instantiated and called as such:
 * var obj = new FrontMiddleBackQueue()
 * obj.pushFront(val)
 * obj.pushMiddle(val)
 * obj.pushBack(val)
 * var param_4 = obj.popFront()
 * var param_5 = obj.popMiddle()
 * var param_6 = obj.popBack()
 */
```

□ **Custom Testcase** Use Example Testcases

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