

The Queue MIS

Imported Modules:

Out

Interfaces:

PROCEDURE AddToQueue(n:INTEGER);
PROCEDURE DeleteFromQueue();
PROCEDURE GetHeadOfQueue():INTEGER;
PROCEDURE GetRearOfQueue():INTEGER;
PROCEDURE QueueIsEmpty():BOOLEAN;

Exceptions:

QueueFull: BOOLEAN
QueueEmpty: BOOLEAN

State Constants:

MaxSize: INTEGER (0 <= MaxSize)

State Variables:

CurrentQueue: lists[INTEGER]
Initially CurrentQueue is NIL
CurrentPositionOfQueue : INTEGER
Initially CurrentPositionOfQueue is 0

Behavior Rules:

AddToQueue:

<i>Input</i>	<i>Output</i>	<i>Transition</i>	<i>Exception</i>
n: INTEGER	--	q := q n	 q > Max_Size => QueueFull

DeleteFromQueue:

<i>Input</i>	<i>Output</i>	<i>Transition</i>	<i>Exception</i>
--	--	q := tl[q]	 q = 0 => QueueEmpty

GetHeadOfQueue:

<i>Input</i>	<i>Output</i>	<i>Transition</i>	<i>Exception</i>
--	n: INTEGER	q[0]	 q = 0 => QueueEmpty

GetRearOfQueue:

<i>Input</i>	<i>Output</i>	<i>Transition</i>	<i>Exception</i>
--	n: INTEGER	q[q - 1]	 q = 0 => QueueEmpty

QueueIsEmpty:

<i>Input</i>	<i>Output</i>	<i>Transition</i>	<i>Exception</i>
--	BOOLEAN	--	--

Note: q refers to CurrentQueue