| **Queue ADT** |
| --- |
| Queue = { (, , ,...,), peek, back} |
| 0 ≤ n ∧ Size(Queue) = n ∧ peek = ∧ back = |
| * Queue − → Queue * enqueue Queue × Element → Queue * dequeue Queue → Element * peek Queue → Element * isEmpty Queue → Boolean * size Queue → Integer |

| **Queue − → Queue**  Builds an empty queue  Preconditions: −  Postconditions: Queue q = ∅. |
| --- |

| **enqueue Queue × Element → Queue**  Inserts a new element e to the back of the queue q  Preconditions: : Queue q = (, , ,..., ) and element e or q = ∅ and element e  Postconditions: Queue q = (, , ,..., , ) or q = () |
| --- |

| **dequeue Queue → Element**  Extracts the element in Queue q’s front  Preconditions:Queue q ∅ i.e. s = (, , ,..., )  Postconditions: Queue q = (, , ,..., ) and Element |
| --- |

| **peek Queue → Element**  Recovers the value of the element on the front of the queue.  Preconditions:Queue q ∅ i.e. s = (, , ,..., )  Postconditions: Element |
| --- |

| **isEmpty Queue → Boolean**  Determines if the Queue q is empty or not  Preconditions: Queue q  Postconditions: True if q = ∅, False if q ∅ |
| --- |

| **size Queue → Integer**  Returns the number of elements currently stored in the queue.  Preconditions: Queue q  Postconditions: size(q) = n, where n is the number of elements in the queue. |
| --- |