

BILAGA A – ADT Queue

Type

Queue

Description: Queue is a finite ordered sequence of elements. Element is an element of a Queue.

Properties

A new queue is empty, meaning that its size is 0.

The queue can store an undetermined number of elements.

The elements are ordered but not sorted.

FIFO - First In First Out.

Operations

Description: $\emptyset \rightarrow Q$

Pre: true

Post: a new empty queue has been created,

`isEmpty() == true`

`create()`

Description: $Q \rightarrow \emptyset$

Pre: true

Post: The queue has been deleted

`destroy()`

Description: $Q \times E \rightarrow Q$

Pre: true

Post: The Element has been enqueued

`enqueue(in: Element e)`

Description: $Q \rightarrow Q$

Pre: `!isEmpty()`

Post: The first element has been dequeued

`dequeue()`

Description: $Q \rightarrow B$

Pre: true

Post: Returns true if the queue is true otherwise false.

`isEmpty(out: Boolean)`

Description: $Q \rightarrow I$

Pre: True

Post: Returns the number of elements in the queue.

`getSize(out: Integer)`

Description: $Q \rightarrow Q$

Pre: True

Post: The inputted array has been filled with the values of the queue.

`display (in: Pointer address to array)`

Description: $Q \rightarrow E$

Pre: `!isEmpty()`

Post: The first element in the Queue has been returned

`first(out: First Element in Queue)`