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| **TAD Queue** |
| Queue = {elements =〈〉} ()  *∀ n ∈ N* |
| {inv*:*   * *It must follow the First In First Out (FIFO) principle, ∀ x, y ∈ [1, n], where n is the number of elements in the queue, if x was enqueued before y, in order to dequeue y first needs to be dequeue x.* * *∀ x ∈ Queue, x should be of a consistent type.)}* |
| * Create Queue: Queue * Add Element: Queue X Element Queue * Remove Element: Queue Queue X Element * First Element: Queue Element * Check Queue: Boolean * Count Elements: Int |
| **Create Queue [***Queue***] – Constructor**  *“Creates a new and empty queue”.*  *{Pre: None}.*  *{Post: Returns an empty Queue}.*  **Add Element [***enqueue***] – Modifier**  *“Given an element by parameter it is added into the back of the Queue”.*  *{Pre: There must be a Queue, and the element must be of a compatible type}.*  *{Post: Returns the updated Queue}.*  **Remove Element [***dequeue***] - Modifier**  *“Removes and returns the element at the front of the Queue (the first one enqueued), else it returns null”.*  *{Pre: There must be Queue}.*  *{Post: Returns the updated Queue and the element removed.}*  **First Element [***peek***] - Analyser**  “*Returns the element at the front of the Queue (the first one enqueued), else it returns null”.*  *{Pre: There must be a Queue}.*  *{Post: Returns the element}.*  **Check Queue [***isEmpty***] - Analyser**  “*Returns a Boolean value corresponding to the elements on the Queue, if there is any returns false but if it has no elements returns true”.*  *{Pre: None}.*  *{Post: A corresponding Boolean value is returned}.*  **Count Elemnts [***size***] - Analyser**  “*Returns a int value corresponding to number of total elements on the Queue, if there is none it returns 0”.*  *{Pre: None}.*  *{Post: A corresponding int value is returned}.* |