***Stacks Functions***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Function Name** | **Description** | **Arguments** | **Return Types** | **Exceptions** | **Worst Case** | **Amortized run time** |
| push | Push element inside the stack | Integer | Void | None | O (1) Constant | O (1) Constant |
| pop | Deletes the top of Stack, also removes the element | None | Integer | Throws Empty Exceptions (char const\*) | O(1) Constant | O(1) Constant |
| peek | Returns the top of Stack | None | Integer | Throws Empty Exceptions (char const\*) | O(1)Constant | O(1) Constant |
| isempty | Return True if the stack is empty | None | Boolean | None | O(1) Constant | O(1) Constant |
| Size | Returns the size of stack | None | Integer | None | O(1) Constant | O(1) Constant |
| Purge | Purges the whole stack, Reset | None | None | None | O(1) Constant | O(1) Constant |

***Queue Functions***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Function Name** | **Description** | **Arguments** | **Return Types** | **Exceptions** | **Worst Case** | **Amortized run time** |
| add | Adds element to the tail of the Queue | Integer | Void | None | O(1) Constant | O(1 ) Constant |
| poll | Returns the front of the Queue, also removes it | None | Integer | Throws Empty Exceptions (char const\*) | O(n) where n is the current size of queue | O(1) Constant |
| front | Returns the front of the Queue | None | Integer | Throws Empty Exceptions (char const\*) | O(n) where n is the current size of queue | O(1) Constant |
| isempty | Returns True if stack empty | None | Boolean | None | O(1) Constant | O(1) Constant |
| Size | The size of the Queue | None | Integer | None | O(1) Constant | O(1) Constant |
| Purge | Purge the while queue, Reset | None | None | None | O(1) Constant | O(1) Constant |