Task 4

1. Adding Item

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| Asda  Linked-Lists | Sorted Linked-Lists |
| O(n)  It’s less costly then the sorted list because we don’t need an extra element of Sorting the list after adding. | O(n + m)  Only because of the element of sorting it may the extra loop or maybe not. |

1. Removing Item

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| --- | --- |
| Linked-Lists | Sorted Linked-Lists |
| O(n)  The cost of the following method none more than O(n) because we just want of skip the elements backward from the end. | O(n)  The same method as linked-list can implemented for the following list no-changes need to make. |

1. Searching item

|  |  |
| --- | --- |
| Linked-Lists | Sorted Linked-Lists |
| O(n)  For Searching it only needs one loop and a check that point the following and loop to return the index for it. | O(n)  No changes need for the following function as we have in our simple linked-list the complexity none more than O(n) or O(n) is max worst case for the following function. |

1. Searching item

|  |  |
| --- | --- |
| Sorted Singly Linked-Lists | Sorted Doubly Linked-Lists |
| O(n)  The method can be fulfill the task by implementing same logic as in the linked-list | O(n)  No more changes need in this method so, the complexity is same as in Sorted Singly Linked-Lists |