CSE205 - Data Structures and Algorithms

Lab 2 - Arrays & Lists

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1. Write a function srch(array,element) that searches the array for the element and returns the index (position) in the array if the element is found, and -1 otherwise.

- Suppose arr = [1,4,3,2]
    - srch(arr,3) should return 3
    - srch(arr,6) should return -1

2. Write a function insatind(array,position,element) to insert an element into an array at the specified index (position).

- Suppose arr = [1,4,3,2]
    - insatind(arr,3,6) should return [1,4,6,3,2]

3. Write a function delatind(array,position) to delete the element at the specified index (position) in the array.

- Suppose arr = [1,4,3,2]
    - delatind(arr,3) should return [1,4,2]

4. Write a function insatend(array,element) that inserts an element at the end of an array.

- Suppose arr = [4, 6, 2, 9]
    - insatend(arr,55) should return [4, 6, 2, 9, 55]

5. Write a function insatbeg(array,element) that inserts an element at the beginning of the array.

- Suppose arr = [4, 6, 2, 9]
    - insatend(arr,55) should return [55, 4, 6, 2, 9]

6. Write a function lsrch(linked_list,element) that searches a linked list for the element and returns the index (position) in the linked lsit if the element is found, and -1 otherwise.

- Suppose lnklist = 1 --> 2 --> 3 --> 4
    - lsrch(lnklist,3) should return 3
    - lsrch(lnklist,6) should return -1

7. Write a function linsatend(linked_list,element) that inserts an element at the end of a linked list.

- Suppose lnklist = 1 --> 2 --> 3 --> 4
    - linsatend(lnklist,55) should return 1 --> 2 --> 3 --> 4 --> 55

8.a Write a function linsatbeg(linked_list,element) that inserts an element at the beginning of the linked list.

- Suppose lnklist = 1 --> 2 --> 3 --> 4
    - linsatend(lnklist,55) should return 55 --> 1 --> 2 --> 3 --> 4

8.b Write a function delatend(linked_list) that deletes the last element of the linked list.

- Suppose lnklist = 1 --> 2 --> 3 --> 4
    - linsatend(lnklist,55) should return 55 --> 1 --> 2 --> 3 --> 4

9. Write a function replatind(array,position,element) to replace an element into an array at the specified index (position).

- Suppose arr = [1,2,3,4]
    - replatind(arr,3,6) should return [1,2,6,4]
    - replatind(arr,6,6) should return -1

10. Write a function replatind(linked_list,position,element) to replace an element in the linked_list at the specified position.

- Suppose lnklist = 1 --> 2 --> 3 --> 4
    - replatind(lnklist,3,6) should return 1 --> 2 --> 6 --> 4
    - replatind(lnklist,6,6) should return -1

11. Write a function dubbly_append(dlinked_list,element) to append an element into the doubly linked list.

- Suppose dlnkd_list = 1 <--> 6 --> 22 --> 3
    - dubbly_append(dlnkd_list,6) should return 1 <--> 6 <--> 22 <--> 3 <--> 6

12. Write a function dubbly_remove(dlinked_list,element) to remove an element from the doubly linked list.

- Suppose dlnklist = 1 <--> 6 --> 22 --> 3
    - dubbyl_remove(dlnklist,22) should return 1 <--> 6 <--> 3 <--> 6
