SSN College of Engineering,
Department of Computer Science and Engineering
CS2309 - Java Lab

Exercise 4a:

1.Write a program to perform string operations using ArrayList. Write functions for the following

a. Append - add at end
b. Insert – add at particular index
c. Delete
d. Replace
e. Search
f. Index of
g. all string starts with 'a'
h. Append list – another list all elements are appended at end.

Exercise 4b:

1. Implement Lisp-like list in Java. Write basic operations such as 'car', 'cdr', and 'cons'. If L is a list [3, 0, 2, 5], L.car() returns 3, while L.cdr() returns [0,2,5].

Instructions:

1. Create a package myjava.lisplist.
2. Create a class Lisp with a arraylist member and the following functions
   [Hint use ArrayList to perform operations]
   L =[3,0,2,5]
   1. create() – function to create the array list
      get input from the user in interactive manner and form the list collection.
   2. displist() – function to display the arraylist
   3. car() - returns the first element in the arraylist
      o/p – [3] [hint : L will be [3,0,2,5] ---no change]
   4. cdr() - returns the remaining elements except first
      o/p – [0,2,5] [hint : L will be [3,0,2,5] ---no change]
   5. cons(data) – add data as first element in list
      o/p – [data,3,0,2,5] [hint : L will be [data,3,0,2,5] --- change]
   6. length() - returns the no. of elements in list
      o/p – 4 [hint : Consider L [3,0,2,5]]
   7. nthcdr(n) – run 'n' times cdr
      o/p nthcdr(2) → [2,5] [hint : Consider L [3,0,2,5]]

8. setcar(n) – replace car element as n
   o/p setcar(4) → [4,0,2,5] [hint : Consider L [3,0,2,5] and
   L will change to [4,0,2,5]]
9. setcdr(list) - add list as cdr element
   o/p setcdr(L1) where L=[3,0,2,5] and L1 =[3,4]
   → L=[3,3,4]
10. nthlist(n) – returns 'n'th element from list
    o/p nthlist(3) → 5 where L = [3,0,2,5]
    nthlist(7) → null
11. first_last() – returns the first and last element from list
    o/p [3,5] where L=[3,0,2,5]
12. cadr() – similar to car(cdr())
    o/p [0] where L=[3,0,2,5]

3. Create a Application program to use these functions.