To: Professor Potika, Computer Science Class 146, SJSU.
Date: 09/15/2019

Purpose: To report the process of creating two programs. The first one is to shuffling data read from file and write to another file. The second program is to make a circular linked list, insert elements and delete until one element left.

Proposed Solution:

The first program required to input data from file, shuffle the array element randomly and then write to file.

The second program required to make a circular linked list, delete elements according to the k position until there is only one element left.

Approach:

For the first program we will read in from the file and save data in an array. Then we shuffle the array position by making a random number and swapping that index with the last element that has not been swap.

For the second program, we will create a circular linked list class with insert, delete methods. Then we insert data into the link list, delete one by one at the position k. The last element in the list will be the result. We will create an insertNode to input all the data needed, remember to put the tail of the list to point to the head, this action would make the linked list become circular. Ask user to input a number k, this number k will be the counter, whenever the counter starting from 0 count to k, the position where k stopped at that node will be deleted. This action will be written in the delete method.

Cases to consider:

For the first program special case to consider is when the data in many columns are the same, this would result in the swap having the number miss up and we would not tell which index was being swap.

For the second program the special condition would be there will be only one node inserted in the array. Then we would not need to use the delete method anymore, we will just print out the result.

Application:

Use Junit to test the program if it runs successfully or not.

Use Algorithm to swap two array position.

Create and implement the circular linked list.