100pts	Name 1:	
	Name 2:	
	Class Day / Time:	
	Due Date:	

# Lab #14: Arrays & Linked Lists of Sheep

Implement the Sheep Class discussed in class and the list class for arrays and for linked-lists. For this assignment you will need to provide 2 implementations of the Sheep List – one as an array & the other as a linked list.

Provide the following menu:

### SHEEP LIST MANAGER

- 1 Add Sheep
- 2 Output 1st Sheep
- 3 Find Sheep
- 4 List Size
- 5 Output List
- 6 Clear List
- 0 Exit

Enter a command:

## For all Implementations:

- Add Sheep will add to the end of the list for each implementation.
  - Note: Sheep are never over 9 years of age
- Output 1<sup>st</sup> Sheep will output the 1<sup>st</sup> sheep in the list
- Find Sheep will find the sheep and output it
- List Size will output the size of the list
- Output List will output the sheep in table format and the list size
- Clear list will clear all sheep from the list

Be sure to error check in the same style as the linked-list labs.

The Output List option should Output a table formatted like the one below:

NAME	AGE
Fluffy	1
Maa	3
Baa Ba	2



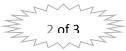
### Turn in (IN THIS ORDER - stapled)

- 1. The **first page** of this lab
- 2. Output for the array implementation  $\rightarrow$  cut and pasted to a txt file within eclipse and printed
- 3. Header File for Main
- 4. Int Main()
- 5. Implementation of any necessary functions
- 6. Header File for Class List
- 7. Class list Methods (in order)
- 8. Header File for Sheep Class
- 9. Sheep Methods (in order)
- 10. Then, all the files for the Linked-list implementation in the same order

### **INPUT/OUTPUT:**

NOTE: Output doesn't need to be in columns and where is states <re-display Main Menu> actually re-display the Main Menu

```
***********
                                                 <Re-display Menu>
                                                 Enter a command: 4
* WELCOME TO THE SHEEP LIST MANAGER *
***********
                                                 There are 2 sheep in the list!
SHEEP LIST MANAGER
                                                  <Re-display Menu>
1 - Add Sheep
                                                  Enter a command: 5
2 - Output 1st Sheep
3 - Find Sheep
4 - List Size
5 - Output List
                                                 Fluffy 1
                                                 Maa
6 - Clear List
0 - Exit
                                                 There are 2 sheep in the list!
Enter a command: 1
                                                  <Re-display Menu>
Sheep Name: Fluffy
                                                  Enter a command: 1
Sheep Age: 1
                                                  Sheep Name: Baa Baa
The sheep...
                                                  Sheep Age: 2
Sheep Name: Fluffy
Sheep Age: 1
                                                 The sheep..
Has been added!
                                                  Sheep Name: Baa Baa
                                                 Sheep Age: 2
<Re-display Menu>
                                                 Has been added!
Enter a command: 2
                                                  <Re-display Menu>
            AGE
                                                  Enter a command: 5
Fluffy
                                                              AGE
Is at the front of the list.
                                                 Fluffy 1
<Re-display Menu>
                                                 Baa Baa 2
Enter a command: 1
                                                 There are 3 sheep in the list!
Sheep Name: Maa
Sheep Age: 3
                                                  <Re-display Menu>
                                                  Enter a command: 4
The sheep..
Sheep Name: Maa
                                                 There are 3 sheep in the list!
Sheep Age: 3
```



Has been added!

```
<Re-display Menu>
Enter a command: 3
                                                       <Re-display Menu>
                                                       Enter a command: 4
Who are you looking for? Baa Baa
                                                       The list is empty!
NAME
              AGE
_____ ___
                                                       <Re-display Menu>
Baa Baa
                                                       Enter a command: 3
Has been found.
                                                       There are no sheep to be found!
<Re-display Menu>
                                                       <Re-display Menu>
Enter a command: 6
                                                       Enter a command: 2
The list has been cleared!
                                                       Nobody is in front - the list is empty!
<Re-display Menu>
                                                       <Re-display Menu>
Enter a command: 6
                                                       Enter a command: 7
The list is empty!
                                                       **** The number 7 is an invalid entry
                                                       **** Please input a number between 0 and 6 ****
<Re-display Menu>
Enter a command: 5
                                                       <Re-display Menu>
                                                       Enter a command: 0
The list is empty!
```