

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:

```
*****
* WELCOME TO THE SHEEP LIST MANAGER *
*****
```

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 1st Sheep will output the 1st 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** → 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 it states <re-display Main Menu> actually re-display the Main Menu

```
*****
* WELCOME TO THE SHEEP LIST MANAGER *
*****
```

```
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: 1
```

```
Sheep Name: Fluffy
Sheep Age: 1
```

```
The sheep..
Sheep Name: Fluffy
Sheep Age: 1
Has been added!
```

```
<Re-display Menu>
Enter a command: 2
```

```
NAME      AGE
-----
Fluffy      1
```

Is at the front of the list.

```
<Re-display Menu>
Enter a command: 1
```

```
Sheep Name: Maa
Sheep Age: 3
```

```
The sheep..
Sheep Name: Maa
Sheep Age: 3
Has been added!
```

```
<Re-display Menu>
Enter a command: 4
```

There are 2 sheep in the list!

```
<Re-display Menu>
Enter a command: 5
```

```
NAME      AGE
-----
Fluffy      1
Maa         3
```

There are 2 sheep in the list!

```
<Re-display Menu>
Enter a command: 1
```

```
Sheep Name: Baa Baa
Sheep Age: 2
```

```
The sheep..
Sheep Name: Baa Baa
Sheep Age: 2
Has been added!
```

```
<Re-display Menu>
Enter a command: 5
```

```
NAME      AGE
-----
Fluffy      1
Maa         3
Baa Baa     2
```

There are 3 sheep in the list!

```
<Re-display Menu>
Enter a command: 4
```

There are 3 sheep in the list!

```
<Re-display Menu>
Enter a command: 3

Who are you looking for? Baa Baa

NAME          AGE
-----
Baa Baa       2

Has been found.

<Re-display Menu>
Enter a command: 6

The list has been cleared!

<Re-display Menu>
Enter a command: 6

The list is empty!

<Re-display Menu>
Enter a command: 5

The list is empty!
```

```
<Re-display Menu>
Enter a command: 4

The list is empty!

<Re-display Menu>
Enter a command: 3

There are no sheep to be found!

<Re-display Menu>
Enter a command: 2

Nobody is in front - the list is empty!

<Re-display Menu>
Enter a command: 7

**** The number 7 is an invalid entry      ****
**** Please input a number between 0 and 6 ****

<Re-display Menu>
Enter a command: 0
```