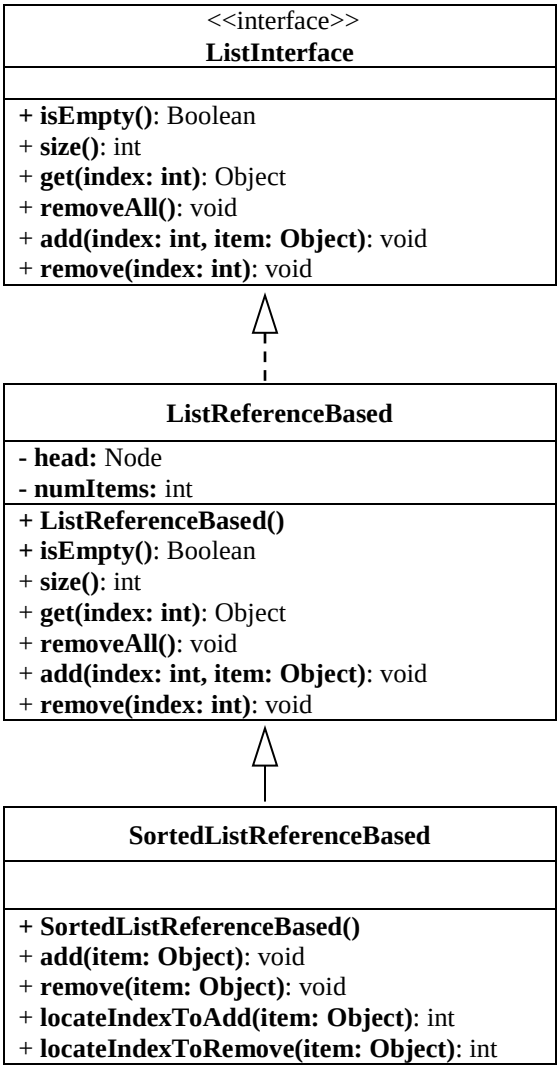
COSC 1437 Programming Assignment (Fall 2016)

SortedListReferenceBased

Topics

- Throughout this lab, we want to practice abstract data type (ADT).
- In the previous lab/assignment, you were asked to implement a SortedListArrayBased class, while this lab asks you to implement two classes: "ListReferenceBased.java" and "SortedListReferenceBased.java".
- After finishing this lab, you will be more confident in manipulating reference.

Activities



- Start with the following supportive files ("ListException.java", "ListIndexOutOfBoundsException.java", "ListInterface.java", "Node.java", "SortedListDriver.java" "ListReferenceBased.java", and "SortedListReferenceBased.java").
- The first five java files are complete, thus use them as they are. You're asked to show your work on the two java files, "**ListReferenceBased.java**" and "**SortedListReferenceBased.java**".
- In Ch. 5, we discussed the required implementation details of "**ListReferenceBased.java**". Also, please refer to your "**SortedListArrayBased.java**" in the previous lab/assignment for "**SortedListReferenceBased.java**".
- You should keep the sorted (say, non-decreasing) order of items, while adding and deleting an item using "add()" and "delete()", respectively. Keeping the sorted order of the contents in the list is the key in this lab.
- Note that index starts from 0, not 1. Therefore, the valid index ranges from 0 to size()-1.

Running Example

```
0. apples
1. black beans
2. bread
3. butter
4. chicken
5. eggs
6. flour
7. milk
8. pecans
9. rice
10. sausage
numItems is now: 11

Adding juice …
item 5 is: eggs
0. apples
1. black beans
2. bread
3. butter
4. chicken
5. eggs
6. flour
7. juice
8. milk
9. pecans
10. rice
11. sausage
numItems is now: 12
```

```
Removing juice…
0. apples
1. black beans
2. bread
3. butter
4. chicken
5. eggs
6. flour
7. milk
8. pecans
9. rice
10. sausage
numItems is now: 11

Adding banana …
0. apples
1. banana
2. black beans
3. bread
4. butter
5. chicken
6. eggs
7. flour
8. milk
9. pecans
10. rice
11. sausage
numItems is now: 12
```

```
Removing sausage…
0. apples
1. banana
2. black beans
3. bread
4. butter
5. chicken
6. eggs
7. flour
8. milk
9. pecans
10. rice
numItems is now: 11

Removing cheese…
0. apples
1. banana
2. black beans
3. bread
4. butter
5. chicken
6. eggs
7. flour
8. milk
9. pecans
10. rice
numItems is now: 11
Press any key to continue …
```

What to Hand in

- Turn in your programs, "**ListReferenceBased.java**" and "**SortedListReferenceBased.java**", via Blackboard.