

**Gebze Technical University  
Computer Engineering**

**CSE 222 - 2019 Spring**

**HOMEWORK 1 REPORT**

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## 1 INTRODUCTION

## 1.1 Problem Definition

### Self definition of a single linked list and provide some operations over it.

## 2 METHOD

## 2.1 Problem Solution Approach

addExp(Experiment) : There is 3 possibilities to add: adding a new day,adding first day of list,and adding and extra experiment to list.This method takes this three situations to handle.

getExp(day, index) : First save the head then go and find day.If could not find it return null.If finds the day then go to index.If could not find, it return null.Else return Experiment.

setExp(day, index, E) : Finds the node like getExp then change it with given Experiment.

removeExp(day, index): There is 3 possibilities to handle:remove the experiment from a day,remove a day(cause there is only 1 experiment in that day.),and removing head.This method takes this tree situations to handle.

listExp(day): Finds the day like getExp then prints all experiments in that day to the screen.

removeDay(day) : Finds the day like getExp then remove all its experiments by deleting link to it.

orderDay(day): Finds the day like `getExp` then by using bubble sort changes its data between nodes.

orderExperiments(): Create a ExperimentList then clone the original list to it. And then order it by bubble sort like oerderDay.

	addExp	getExp	setExp	removeExp	listExp	removeDay	orderDay	orderExperiments
Big O nota.	O(n)	O(n)	O(n)	O(n)	O(n)	O(n)	O( $n^2$ )	O( $n^2$ )

## 3 RESULT

### 3.1 Test Cases

I appended some other test cases other than your driver class and this is those:

```
System.out.println("-----");
System.out.println("Original list:");
list.listAll();
System.out.println("-----");
System.out.println("orderday(3) Result:");
list.orderDay(3);
list.listAll();
```

### 3.2 Running Results

-----  
Add new experiment:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}

List experiment view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}

List day view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}

-----  
Add new experiment:

Experiment{setup='setup1', day=2, time='timeInfo', accuracy=0.1, completed=true}

List experiment view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}

Experiment{setup='setup1', day=2, time='timeInfo', accuracy=0.1, completed=true}

List day view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}

-----  
Add new experiment:

Experiment{setup='setup2', day=0, time='timeInfo', accuracy=0.2, completed=true}

List experiment view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}

Experiment{setup='setup1', day=2, time='timeInfo', accuracy=0.1, completed=true}

Experiment{setup='setup2', day=0, time='timeInfo', accuracy=0.2, completed=true}

List day view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}

Experiment{setup='setup2', day=0, time='timeInfo', accuracy=0.2, completed=true}

-----  
Add new experiment:

Experiment{setup='setup3', day=3, time='timeInfo', accuracy=0.3, completed=true}

List experiment view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}

Experiment{setup='setup1', day=2, time='timeInfo', accuracy=0.1, completed=true}

Experiment{setup='setup2', day=0, time='timeInfo', accuracy=0.2, completed=true}

Experiment{setup='setup3', day=3, time='timeInfo', accuracy=0.3, completed=true}









List experiment view:

List day view:

Add new experiment:

List experiment view:

List day view:

Add new experiment:

```
Experiment{setup='setup17', day=0, time='timeInfo', accuracy=1.7, completed=true}
```





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Add new experiment:

Experiment{setup='setup19', day=3, time='timeInfo', accuracy=1.9, completed=true}

List experiment view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}  
Experiment{setup='setup1', day=2, time='timeInfo', accuracy=0.1, completed=true}  
Experiment{setup='setup5', day=2, time='timeInfo', accuracy=0.5, completed=true}  
Experiment{setup='setup7', day=2, time='timeInfo', accuracy=0.7, completed=true}  
Experiment{setup='setup10', day=2, time='timeInfo', accuracy=1.0, completed=true}  
Experiment{setup='setup2', day=0, time='timeInfo', accuracy=0.2, completed=true}  
Experiment{setup='setup4', day=0, time='timeInfo', accuracy=0.4, completed=true}  
Experiment{setup='setup8', day=0, time='timeInfo', accuracy=0.8, completed=true}  
Experiment{setup='setup13', day=0, time='timeInfo', accuracy=1.3, completed=true}  
Experiment{setup='setup14', day=0, time='timeInfo', accuracy=1.4, completed=true}  
Experiment{setup='setup17', day=0, time='timeInfo', accuracy=1.7, completed=true}  
Experiment{setup='setup3', day=3, time='timeInfo', accuracy=0.3, completed=true}  
Experiment{setup='setup6', day=3, time='timeInfo', accuracy=0.6, completed=true}  
Experiment{setup='setup9', day=3, time='timeInfo', accuracy=0.9, completed=true}  
Experiment{setup='setup12', day=3, time='timeInfo', accuracy=1.2, completed=true}  
Experiment{setup='setup16', day=3, time='timeInfo', accuracy=1.6, completed=true}  
Experiment{setup='setup18', day=3, time='timeInfo', accuracy=1.8, completed=true}  
Experiment{setup='setup19', day=3, time='timeInfo', accuracy=1.9, completed=true}  
Experiment{setup='setup11', day=1, time='timeInfo', accuracy=1.1, completed=true}  
Experiment{setup='setup15', day=1, time='timeInfo', accuracy=1.5, completed=true}

List day view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}  
Experiment{setup='setup2', day=0, time='timeInfo', accuracy=0.2, completed=true}  
Experiment{setup='setup3', day=3, time='timeInfo', accuracy=0.3, completed=true}  
Experiment{setup='setup11', day=1, time='timeInfo', accuracy=1.1, completed=true}

-----

getExp(0,3) Result:

Experiment{setup='setup13', day=0, time='timeInfo', accuracy=1.3, completed=true}

-----

setExp(0,3), accuracy=1.0

-----

getExp Result:

Experiment{setup='setup13', day=0, time='timeInfo', accuracy=1.0, completed=true}

-----

listExp(0) Result:

Experiment{setup='setup2', day=0, time='timeInfo', accuracy=0.2, completed=true}  
Experiment{setup='setup4', day=0, time='timeInfo', accuracy=0.4, completed=true}  
Experiment{setup='setup8', day=0, time='timeInfo', accuracy=0.8, completed=true}  
Experiment{setup='setup13', day=0, time='timeInfo', accuracy=1.0, completed=true}  
Experiment{setup='setup14', day=0, time='timeInfo', accuracy=1.4, completed=true}  
Experiment{setup='setup17', day=0, time='timeInfo', accuracy=1.7, completed=true}

-----

removeExp(0,0) Result:

List experiment view:

Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}  
Experiment{setup='setup1', day=2, time='timeInfo', accuracy=0.1, completed=true}  
Experiment{setup='setup5', day=2, time='timeInfo', accuracy=0.5, completed=true}  
Experiment{setup='setup7', day=2, time='timeInfo', accuracy=0.7, completed=true}







Experiment{setup='setup6', day=3, time='timeInfo', accuracy=0.6, completed=true}  
Experiment{setup='setup3', day=3, time='timeInfo', accuracy=0.3, completed=true}  
List day view:  
Experiment{setup='setup0', day=2, time='timeInfo', accuracy=0.0, completed=true}  
Experiment{setup='setup4', day=0, time='timeInfo', accuracy=0.4, completed=true}  
Experiment{setup='setup18', day=3, time='timeInfo', accuracy=1.8, completed=true}