Gebze Technical University
Computer Engineering

CSE 222 - 2019 Spring

HOMEWORK 02 REPORT

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1 INTRODUCTION

1.1 Problem Definition

In this homework, We will create an ExperimentList class to keep track of some machine learning experiments and their results. A machine learning experiment should include the following variables *setup(String), day(integer), time(String), completed(boolean), accuracy(float).* This class should implement the basics of a single linked list to keep the experiments. In order to speed up add and remove operations, an additional list structure should be defined in the level of days.

1.2 System Requirements

We will develop this program for all devices running Java.
Simply, we can partition this program into four part(class).

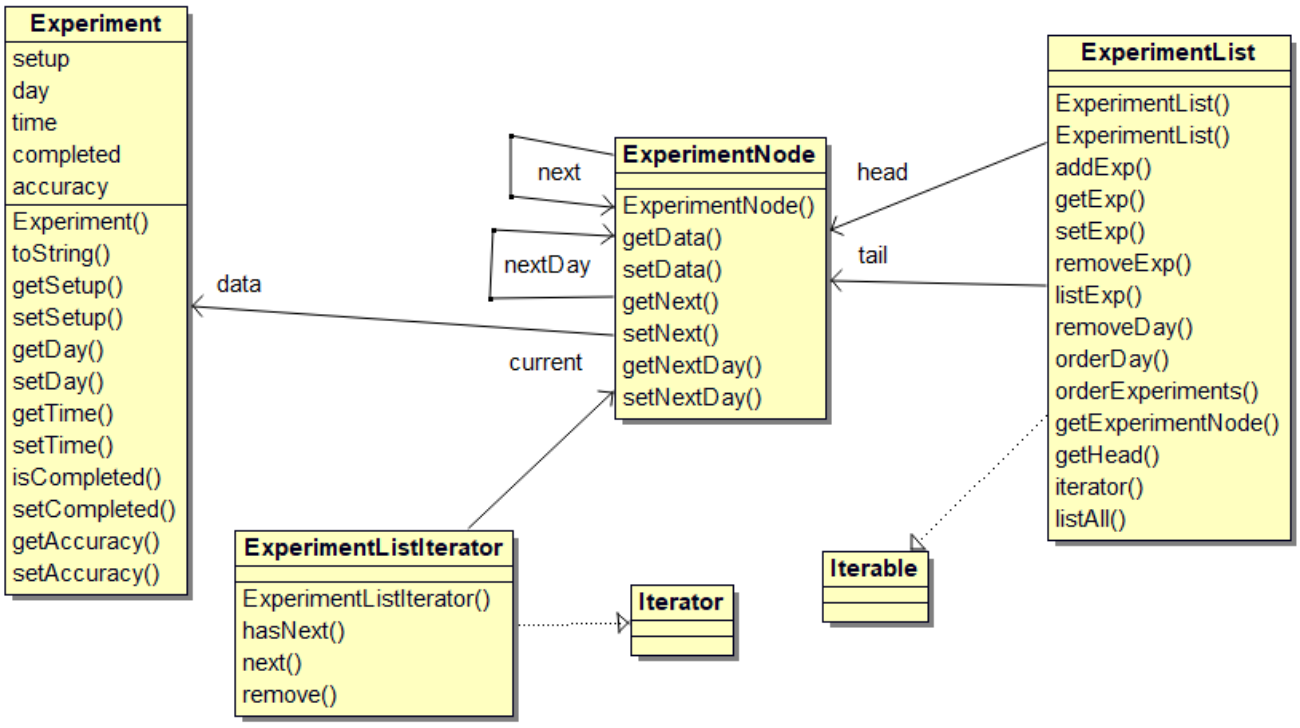
1. Experiment
    a. *setup(String):* hold the experimental setup information
    b. *day(integer):* represents the day of start
    c. *time(String):* represents the time of start
    d. *completed(boolean):* indicates whether it is completed or not
    e. *accuracy(float):* represents the output
2. ExperimentNode
    a. *data(Experiment):* The ExperimentNode's hold data.
    b. *next(ExperimentNode):* The ExperimentNode's hold next reference.
    c. *nextDay(ExperimentNode):* The ExperimentNode's hold nextDay reference.
3. ExperimentListIterator
    a. *current(ExperimentNode):* The ExperimentList's hold previous data.
4. ExperimentList
    a. *head(ExperimentNode):* The ExperimentList's hold head(start of the list) reference.
    b. *tail(ExperimentNode):* The ExperimentList's hold tail(end of the list) reference.

This program should also support the following functions:

1. *addExp(Experiment):* insert experiment to the end of the day
2. *getExp(day, index) :* get the experiment with the given day and position
3. *setExp(day, index, Experiment)* set the experiment with the given day and position
4. *removeExp(day, index):* remove the experiment specified as index from given day
5. *listExp(day):* list all completed experiments in a given day
6. *removeDay(day):* remove all experiments in a given day
7. *orderDay(day):* sorts the experiments in a given day according to the accuracy, the changes will be done on the list
8. *orderExperiments():* sorts all the experiments in the list according to the accuracy, the original list should not be changed since the day list may be damage. it will return the head of the sorted list

2 METHOD

2.1 Class Diagrams



2.2 Use Case Diagrams

It is not necessary to use case diagrams.

2.3 Other Diagrams (optional)

It is not necessary to other diagrams.

2.4 Problem Solution Approach

Given the system requirements of the program to be developed and the functions that should be supported, it is necessary to decide what kind of data structure should be used in order to develop the desired structure. A list is intended to hold an unlimited number of data in accordance with the information provided, but it must also work quickly in the functions that are expected to operate on the data as well as to retain this data. Single-LinkedList is the most suitable data type for this structure. Other requirements not supported by this structure are added to the structure as extra features and the aim is to establish the final structure.

It is aimed to solve the problem by design and coding of the following classes respectively.

1. Experiment
   The data type in which the data to be kept in the list is stored
2. ExperimentNode
   The data type in which to link the data in the list to each other
3. ExperimentListIterator
   The Class required to quickly navigate and print the elements in the list
4. ExperimentList
   The final class in which the final data is arranged sequentially behind each other with the help of the classes created above.

2.5 Complexity of Functions

The complexity of functions is calculated according to the number and structure of the loops they contain. Since the complexity calculations are considered infinite, the comparison, assignment and similar operations within the functions are not included in the calculations since they do not have any meaning in infinity.

Function Name	Complexity	Big O Notation
addExp()	$T_1(n)=n+T_9(n)$ = 3n	$O(n)$
getExp()	$T_2(n)=T_9(n)$ = 2n	$O(n)$
setExp()	$T_3(n)=T_9(n)$ = 2n	$O(n)$
removeExp()	$T_4(n)=n+n+T_9(n)+n$ = 5n	$O(n)$
listExp()	$T_5(n)=n+n$ = 2n	$O(n)$
removeDay()	$T_6(n)=n+n+T_9(n)$ = 4n	$O(n)$
orderDay()	$T_7(n)=n+n+(n*n)$ = $2n+n^2$	$O(n^2)$
orderExperiments()	$T_8(n)=n*n$ = n^2	$O(n^2)$
getExperimentNode()	$T_9(n)=n+n$ = 2n	$O(n)$
getHead()	$T_{10}(n)=1$ = 1	$O(1)$
iterator()	$T_{11}(n)=1$ = 1	$O(1)$

3 RESULT

3.1 Test Cases

Test Case No	Case	Real Output	Status
1	Add the first element to the list	Add element to top of list	successful
2	Add element to the end of the list	Add element to end of list	successful
3	Add element to the middle of the list	Add element to middle of list	successful
4	Add element to the end of a day in the list	Add element to end of a day in the list	successful
5	Fetch a specific item of the given day and index from the list	Fetching the desired element	successful
6	Change a specific item from the list based on the given day and index information.	Changing the desired element	successful
7	Delete a specific element from given day and index in the list	Deleting the desired element	successful
8	Delete the first element of the list	Delete element to top of list	successful
9	Delete element from the middle of the list	Delete element to middle of list	successful
10	Delete the last element of the list	Delete element to end of list	successful
11	Delete a specific given day from the list in its entirety	Deleting the desired day entirety	successful
12	Print completed experiments on a specific day in the list	Print to screen	successful
13	Sort the experiments on a given day to their accuracy value on the original list	Sorted list according to accuracy on a given day	successful
14	Sort all experiments in the list by the accuracy value and return the first element of the new list	Sorted list according to accuracy	successful
15	Checking whether the data integrity of the list is broken after all the above operations	The integrity is not broken.	successful
16	Can this structure quickly go to the first element of the next day on the list?	Yes	successful

3.2 Running Results

- Add Experiment and Iterator use Test Result

Example input:

```
myList.addExp(new Experiment("Exp70        ", 7, time, false, 4.87F));
myList.addExp(new Experiment("Exp7         ", 7, time, true, 4.87F));
```

Example Iterator use:

```
for (Experiment exp : myList)
    System.out.println(exp);
```

Result:

```
---------------addExp() TEST---------------
--------------Iterator Use TEST--------------
Experiment{setup='Exp10        ', day=1, time='05:36:17', completed=false, accuracy=9.69}
Experiment{setup='Exp100       ', day=1, time='05:36:17', completed=true, accuracy=9.83}
Experiment{setup='Exp100100100', day=1, time='05:36:17', completed=true, accuracy=5.83}
Experiment{setup='Exp1111      ', day=1, time='05:36:17', completed=true, accuracy=8.22}
Experiment{setup='Exp1         ', day=1, time='05:36:17', completed=false, accuracy=7.87}
Experiment{setup='Exp2         ', day=2, time='05:36:17', completed=true, accuracy=0.81}
Experiment{setup='Exp22        ', day=2, time='05:36:17', completed=true, accuracy=7.37}
Experiment{setup='Exp222       ', day=2, time='05:36:17', completed=false, accuracy=2.83}
Experiment{setup='Exp2222      ', day=2, time='05:36:17', completed=false, accuracy=0.37}
Experiment{setup='Exp22222     ', day=2, time='05:36:17', completed=false, accuracy=7.81}
Experiment{setup='Exp1010      ', day=3, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp3         ', day=3, time='05:36:17', completed=true, accuracy=6.87}
Experiment{setup='Exp4         ', day=4, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp5         ', day=5, time='05:36:17', completed=false, accuracy=5.87}
Experiment{setup='Exp500       ', day=5, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp500500    ', day=5, time='05:36:17', completed=false, accuracy=5.87}
Experiment{setup='Exp100100    ', day=6, time='05:36:17', completed=true, accuracy=8.13}
Experiment{setup='Exp1.1       ', day=6, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp70        ', day=7, time='05:36:17', completed=false, accuracy=4.87}
Experiment{setup='Exp7         ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp77        ', day=7, time='05:36:17', completed=false, accuracy=1.81}
Experiment{setup='Exp777       ', day=7, time='05:36:17', completed=true, accuracy=7.81}
Experiment{setup='Exp7777      ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp11        ', day=8, time='05:36:17', completed=true, accuracy=3.22}
Experiment{setup='Exp8         ', day=8, time='05:36:17', completed=true, accuracy=2.87}
Experiment{setup='Exp9         ', day=9, time='05:36:17', completed=true, accuracy=6.22}
Experiment{setup='Exp99        ', day=9, time='05:36:17', completed=true, accuracy=3.22}
```

- Get Experiment Test Result

Example Code:

```
System.out.println(myList.getExp(7, 2));
System.out.println(myList.getExp(1, 0));
```

Result:

```
---------------getExp(7,2),getExp(1,0) TEST---------------
Experiment{setup='Exp77        ', day=7, time='05:36:17', completed=false, accuracy=1.81}
Experiment{setup='Exp10        ', day=1, time='05:36:17', completed=false, accuracy=9.69}
```

- Set Experiment and Order Day Test Result

  Example Code:

```
myList.setExp(7, 2, new Experiment("Exp77new    ", 7, time, false, 5.87F));
```

```
myList.orderDay(2);
for (Experiment exp : myList)
    System.out.println(exp);
```

Result:

```
---------------setExp(7,2,Experiment e) TEST---------------

---------------orderDay(2) TEST---------------
Experiment{setup='Exp10       ', day=1, time='05:36:17', completed=false, accuracy=9.69}
Experiment{setup='Exp100      ', day=1, time='05:36:17', completed=true, accuracy=9.83}
Experiment{setup='Exp100100100', day=1, time='05:36:17', completed=true, accuracy=5.83}
Experiment{setup='Exp1111     ', day=1, time='05:36:17', completed=true, accuracy=8.22}
Experiment{setup='Exp1        ', day=1, time='05:36:17', completed=false, accuracy=7.87}
Experiment{setup='Exp2222     ', day=2, time='05:36:17', completed=false, accuracy=0.37}
Experiment{setup='Exp2        ', day=2, time='05:36:17', completed=true, accuracy=0.81}
Experiment{setup='Exp222      ', day=2, time='05:36:17', completed=false, accuracy=2.83}
Experiment{setup='Exp22       ', day=2, time='05:36:17', completed=true, accuracy=7.37}
Experiment{setup='Exp22222    ', day=2, time='05:36:17', completed=false, accuracy=7.81}
Experiment{setup='Exp1010     ', day=3, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp3        ', day=3, time='05:36:17', completed=true, accuracy=6.87}
Experiment{setup='Exp4        ', day=4, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp5        ', day=5, time='05:36:17', completed=false, accuracy=5.87}
Experiment{setup='Exp500      ', day=5, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp500500   ', day=5, time='05:36:17', completed=false, accuracy=5.87}
Experiment{setup='Exp100100   ', day=6, time='05:36:17', completed=true, accuracy=8.13}
Experiment{setup='Exp1.1      ', day=6, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp70       ', day=7, time='05:36:17', completed=false, accuracy=4.87}
Experiment{setup='Exp7        ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp77new    ', day=7, time='05:36:17', completed=false, accuracy=5.87}
Experiment{setup='Exp777      ', day=7, time='05:36:17', completed=true, accuracy=7.81}
Experiment{setup='Exp7777     ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp11       ', day=8, time='05:36:17', completed=true, accuracy=3.22}
Experiment{setup='Exp8        ', day=8, time='05:36:17', completed=true, accuracy=2.87}
Experiment{setup='Exp9        ', day=9, time='05:36:17', completed=true, accuracy=6.22}
Experiment{setup='Exp99       ', day=9, time='05:36:17', completed=true, accuracy=3.22}
```

- Remove Day Test Result

  Example Code:

```
myList.removeDay(5);
for (Experiment exp : myList)
    System.out.println(exp);
```

Result:

```
---------------removeDay(5) TEST---------------
Experiment{setup='Exp10       ', day=1, time='05:36:17', completed=false, accuracy=9.69}
Experiment{setup='Exp100      ', day=1, time='05:36:17', completed=true, accuracy=9.83}
Experiment{setup='Exp100100100', day=1, time='05:36:17', completed=true, accuracy=5.83}
Experiment{setup='Exp1111     ', day=1, time='05:36:17', completed=true, accuracy=8.22}
Experiment{setup='Exp1        ', day=1, time='05:36:17', completed=false, accuracy=7.87}
Experiment{setup='Exp2222     ', day=2, time='05:36:17', completed=false, accuracy=0.37}
Experiment{setup='Exp2        ', day=2, time='05:36:17', completed=true, accuracy=0.81}
Experiment{setup='Exp222      ', day=2, time='05:36:17', completed=false, accuracy=2.83}
Experiment{setup='Exp22       ', day=2, time='05:36:17', completed=true, accuracy=7.37}
Experiment{setup='Exp22222    ', day=2, time='05:36:17', completed=false, accuracy=7.81}
Experiment{setup='Exp1010     ', day=3, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp3        ', day=3, time='05:36:17', completed=true, accuracy=6.87}
Experiment{setup='Exp4        ', day=4, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp100100   ', day=6, time='05:36:17', completed=true, accuracy=8.13}
Experiment{setup='Exp1.1      ', day=6, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp70       ', day=7, time='05:36:17', completed=false, accuracy=4.87}
Experiment{setup='Exp7        ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp77new    ', day=7, time='05:36:17', completed=false, accuracy=5.87}
Experiment{setup='Exp777      ', day=7, time='05:36:17', completed=true, accuracy=7.81}
Experiment{setup='Exp7777     ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp11       ', day=8, time='05:36:17', completed=true, accuracy=3.22}
Experiment{setup='Exp8        ', day=8, time='05:36:17', completed=true, accuracy=2.87}
Experiment{setup='Exp9        ', day=9, time='05:36:17', completed=true, accuracy=6.22}
Experiment{setup='Exp99       ', day=9, time='05:36:17', completed=true, accuracy=3.22}
```

- List Experiment Test Result

  Example Code:

```
myList.listExp(7);
```

Result:

```
---------------listExp(7) TEST---------------
Experiment{setup='Exp7        ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp777      ', day=7, time='05:36:17', completed=true, accuracy=7.81}
Experiment{setup='Exp7777     ', day=7, time='05:36:17', completed=true, accuracy=4.87}
```

- Remove Experiment Test Result

  Example Code:

```
myList.removeExp(6, 0);
for (Experiment exp : myList)
    System.out.println(exp);
```

Result:

```
---------------removeExp(6,0) TEST---------------
Experiment{setup='Exp10       ', day=1, time='05:36:17', completed=false, accuracy=9.69}
Experiment{setup='Exp100      ', day=1, time='05:36:17', completed=true, accuracy=9.83}
Experiment{setup='Exp100100100', day=1, time='05:36:17', completed=true, accuracy=5.83}
Experiment{setup='Exp1111     ', day=1, time='05:36:17', completed=true, accuracy=8.22}
Experiment{setup='Exp1        ', day=1, time='05:36:17', completed=false, accuracy=7.87}
Experiment{setup='Exp2222     ', day=2, time='05:36:17', completed=false, accuracy=0.37}
Experiment{setup='Exp2        ', day=2, time='05:36:17', completed=true, accuracy=0.81}
Experiment{setup='Exp222      ', day=2, time='05:36:17', completed=false, accuracy=2.83}
Experiment{setup='Exp22       ', day=2, time='05:36:17', completed=true, accuracy=7.37}
Experiment{setup='Exp22222    ', day=2, time='05:36:17', completed=false, accuracy=7.81}
Experiment{setup='Exp1010     ', day=3, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp3        ', day=3, time='05:36:17', completed=true, accuracy=6.87}
Experiment{setup='Exp4        ', day=4, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp1.1      ', day=6, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp70       ', day=7, time='05:36:17', completed=false, accuracy=4.87}
Experiment{setup='Exp7        ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp77new    ', day=7, time='05:36:17', completed=false, accuracy=5.87}
Experiment{setup='Exp777      ', day=7, time='05:36:17', completed=true, accuracy=7.81}
Experiment{setup='Exp7777     ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp11       ', day=8, time='05:36:17', completed=true, accuracy=3.22}
Experiment{setup='Exp8        ', day=8, time='05:36:17', completed=true, accuracy=2.87}
Experiment{setup='Exp9        ', day=9, time='05:36:17', completed=true, accuracy=6.22}
Experiment{setup='Exp99       ', day=9, time='05:36:17', completed=true, accuracy=3.22}
```

- Order Experiment Test Result

  Example Code:

```
ExperimentList sort = myList.orderExperiments();

for (Experiment exp : sort)
    System.out.println(exp);
```

Result:

```
---------------orderExperiments() TEST---------------
Experiment{setup='Exp2222     ', day=2, time='05:36:17', completed=false, accuracy=0.37}
Experiment{setup='Exp1010     ', day=3, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp4        ', day=4, time='05:36:17', completed=false, accuracy=0.59}
Experiment{setup='Exp2        ', day=2, time='05:36:17', completed=true, accuracy=0.81}
Experiment{setup='Exp222      ', day=2, time='05:36:17', completed=false, accuracy=2.83}
Experiment{setup='Exp8        ', day=8, time='05:36:17', completed=true, accuracy=2.87}
Experiment{setup='Exp11       ', day=8, time='05:36:17', completed=true, accuracy=3.22}
Experiment{setup='Exp99       ', day=9, time='05:36:17', completed=true, accuracy=3.22}
Experiment{setup='Exp1.1      ', day=6, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp70       ', day=7, time='05:36:17', completed=false, accuracy=4.87}
Experiment{setup='Exp7        ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp7777     ', day=7, time='05:36:17', completed=true, accuracy=4.87}
Experiment{setup='Exp100100100', day=1, time='05:36:17', completed=true, accuracy=5.83}
Experiment{setup='Exp77new    ', day=7, time='05:36:17', completed=false, accuracy=5.87}
Experiment{setup='Exp9        ', day=9, time='05:36:17', completed=true, accuracy=6.22}
Experiment{setup='Exp3        ', day=3, time='05:36:17', completed=true, accuracy=6.87}
Experiment{setup='Exp22       ', day=2, time='05:36:17', completed=true, accuracy=7.37}
Experiment{setup='Exp22222    ', day=2, time='05:36:17', completed=false, accuracy=7.81}
Experiment{setup='Exp777      ', day=7, time='05:36:17', completed=true, accuracy=7.81}
Experiment{setup='Exp1        ', day=1, time='05:36:17', completed=false, accuracy=7.87}
Experiment{setup='Exp1111     ', day=1, time='05:36:17', completed=true, accuracy=8.22}
Experiment{setup='Exp10       ', day=1, time='05:36:17', completed=false, accuracy=9.69}
Experiment{setup='Exp100      ', day=1, time='05:36:17', completed=true, accuracy=9.83}
```

- List Experiment Test Result

  Result: next()

```
--------------ExperimentList Structure TEST--------------
ExperimentNode@77caeb3e  Experiment{setup='Exp10       ', day=1, time='05:36:17', completed=false, accuracy=9.69}     next==> ExperimentNode@1e88b3c     nextDay==> ExperimentNode@42d80b78
ExperimentNode@1e88b3c  Experiment{setup='Exp100      ', day=1, time='05:36:17', completed=true, accuracy=9.83}     next==> ExperimentNode@3bfdc050
ExperimentNode@3bfdc050  Experiment{setup='Exp100100100', day=1, time='05:36:17', completed=true, accuracy=5.83}     next==> ExperimentNode@1bce4f0a
ExperimentNode@1bce4f0a  Experiment{setup='Exp1111     ', day=1, time='05:36:17', completed=true, accuracy=8.22}     next==> ExperimentNode@5e3a8624
ExperimentNode@5e3a8624  Experiment{setup='Exp1        ', day=1, time='05:36:17', completed=false, accuracy=7.87}     next==> ExperimentNode@42d80b78

ExperimentNode@42d80b78  Experiment{setup='Exp2222     ', day=2, time='05:36:17', completed=false, accuracy=0.37}     next==> ExperimentNode@5c3bd550     nextDay==> ExperimentNode@91161c7
ExperimentNode@5c3bd550  Experiment{setup='Exp2        ', day=2, time='05:36:17', completed=true, accuracy=0.81}     next==> ExperimentNode@604ed9f0
ExperimentNode@604ed9f0  Experiment{setup='Exp222      ', day=2, time='05:36:17', completed=false, accuracy=2.83}     next==> ExperimentNode@6a4f787b
ExperimentNode@6a4f787b  Experiment{setup='Exp22       ', day=2, time='05:36:17', completed=true, accuracy=7.37}     next==> ExperimentNode@685cb137
ExperimentNode@685cb137  Experiment{setup='Exp22222    ', day=2, time='05:36:17', completed=false, accuracy=7.81}     next==> ExperimentNode@91161c7

ExperimentNode@91161c7  Experiment{setup='Exp1010     ', day=3, time='05:36:17', completed=false, accuracy=0.59}     next==> ExperimentNode@6a41eaa2     nextDay==> ExperimentNode@7cd62f43
ExperimentNode@6a41eaa2  Experiment{setup='Exp3        ', day=3, time='05:36:17', completed=true, accuracy=6.87}     next==> ExperimentNode@7cd62f43

ExperimentNode@7cd62f43  Experiment{setup='Exp4        ', day=4, time='05:36:17', completed=false, accuracy=0.59}     next==> ExperimentNode@6d4b1c02     nextDay==> ExperimentNode@6d4b1c02

ExperimentNode@6d4b1c02  Experiment{setup='Exp1.1      ', day=6, time='05:36:17', completed=true, accuracy=4.87}     next==> ExperimentNode@6093dd95     nextDay==> ExperimentNode@6093dd95

ExperimentNode@6093dd95  Experiment{setup='Exp70       ', day=7, time='05:36:17', completed=false, accuracy=4.87}     next==> ExperimentNode@5622fdf     nextDay==> ExperimentNode@4883b407
ExperimentNode@5622fdf  Experiment{setup='Exp7        ', day=7, time='05:36:17', completed=true, accuracy=4.87}     next==> ExperimentNode@7d9d1a19
ExperimentNode@7d9d1a19  Experiment{setup='Exp77new    ', day=7, time='05:36:17', completed=false, accuracy=5.87}     next==> ExperimentNode@39c0f4a
ExperimentNode@39c0f4a  Experiment{setup='Exp777      ', day=7, time='05:36:17', completed=true, accuracy=7.81}     next==> ExperimentNode@1794d431
ExperimentNode@1794d431  Experiment{setup='Exp7777     ', day=7, time='05:36:17', completed=true, accuracy=4.87}     next==> ExperimentNode@4883b407

ExperimentNode@4883b407  Experiment{setup='Exp11       ', day=8, time='05:36:17', completed=true, accuracy=3.22}     next==> ExperimentNode@42e26948     nextDay==> ExperimentNode@57baeedf
ExperimentNode@42e26948  Experiment{setup='Exp8        ', day=8, time='05:36:17', completed=true, accuracy=2.87}     next==> ExperimentNode@57baeedf
ExperimentNode@57baeedf  Experiment{setup='Exp9        ', day=9, time='05:36:17', completed=true, accuracy=6.22}     next==> ExperimentNode@343f4d3d
ExperimentNode@343f4d3d  Experiment{setup='Exp99       ', day=9, time='05:36:17', completed=true, accuracy=3.22}
```

Result: nextDay()

```
--------------ExperimentList Structure nextDay TEST--------------
ExperimentNode@77caeb3e  Experiment{setup='Exp10       ', day=1, time='11:13:24', completed=false, accuracy=9.69}     nextDay==> ExperimentNode@42d80b78
ExperimentNode@42d80b78  Experiment{setup='Exp2222     ', day=2, time='11:13:24', completed=false, accuracy=0.37}     nextDay==> ExperimentNode@91161c7
ExperimentNode@91161c7  Experiment{setup='Exp1010     ', day=3, time='11:13:24', completed=false, accuracy=0.59}     nextDay==> ExperimentNode@7cd62f43
ExperimentNode@7cd62f43  Experiment{setup='Exp4        ', day=4, time='11:13:24', completed=false, accuracy=0.59}     nextDay==> ExperimentNode@6d4b1c02
ExperimentNode@6d4b1c02  Experiment{setup='Exp1.1      ', day=6, time='11:13:24', completed=true, accuracy=4.87}     nextDay==> ExperimentNode@6093dd95
ExperimentNode@6093dd95  Experiment{setup='Exp70       ', day=7, time='11:13:24', completed=false, accuracy=4.87}     nextDay==> ExperimentNode@4883b407
ExperimentNode@4883b407  Experiment{setup='Exp11       ', day=8, time='11:13:24', completed=true, accuracy=3.22}     nextDay==> ExperimentNode@57baeedf
ExperimentNode@57baeedf  Experiment{setup='Exp9        ', day=9, time='11:13:24', completed=true, accuracy=6.22}
```

```
--------------ExperimentList listAll() TEST--------------

List experiment view:
Experiment{setup='Exp10       ', day=1, time='05:21:51', accuracy=9.69, completed=false}
Experiment{setup='Exp100      ', day=1, time='05:21:51', accuracy=9.83, completed=true}
Experiment{setup='Exp100100100', day=1, time='05:21:51', accuracy=5.83, completed=true}
Experiment{setup='Exp1111     ', day=1, time='05:21:51', accuracy=8.22, completed=true}
Experiment{setup='Exp1        ', day=1, time='05:21:51', accuracy=7.87, completed=false}
Experiment{setup='Exp2222     ', day=2, time='05:21:51', accuracy=0.37, completed=false}
Experiment{setup='Exp2        ', day=2, time='05:21:51', accuracy=0.81, completed=true}
Experiment{setup='Exp222      ', day=2, time='05:21:51', accuracy=2.83, completed=false}
Experiment{setup='Exp22       ', day=2, time='05:21:51', accuracy=7.37, completed=true}
Experiment{setup='Exp22222    ', day=2, time='05:21:51', accuracy=7.81, completed=false}
Experiment{setup='Exp1010     ', day=3, time='05:21:51', accuracy=0.59, completed=false}
Experiment{setup='Exp3        ', day=3, time='05:21:51', accuracy=6.87, completed=true}
Experiment{setup='Exp4        ', day=4, time='05:21:51', accuracy=0.59, completed=false}
Experiment{setup='Exp1.1      ', day=6, time='05:21:51', accuracy=4.87, completed=true}
Experiment{setup='Exp70       ', day=7, time='05:21:51', accuracy=4.87, completed=false}
Experiment{setup='Exp7        ', day=7, time='05:21:51', accuracy=4.87, completed=true}
Experiment{setup='Exp77new    ', day=7, time='05:21:51', accuracy=5.87, completed=false}
Experiment{setup='Exp777      ', day=7, time='05:21:51', accuracy=7.81, completed=true}
Experiment{setup='Exp7777     ', day=7, time='05:21:51', accuracy=4.87, completed=true}
Experiment{setup='Exp11       ', day=8, time='05:21:51', accuracy=3.22, completed=true}
Experiment{setup='Exp8        ', day=8, time='05:21:51', accuracy=2.87, completed=true}
Experiment{setup='Exp9        ', day=9, time='05:21:51', accuracy=6.22, completed=true}
Experiment{setup='Exp99       ', day=9, time='05:21:51', accuracy=3.22, completed=true}

List day view:
Experiment{setup='Exp10       ', day=1, time='05:21:51', accuracy=9.69, completed=false}
Experiment{setup='Exp2222     ', day=2, time='05:21:51', accuracy=0.37, completed=false}
Experiment{setup='Exp1010     ', day=3, time='05:21:51', accuracy=0.59, completed=false}
Experiment{setup='Exp4        ', day=4, time='05:21:51', accuracy=0.59, completed=false}
Experiment{setup='Exp1.1      ', day=6, time='05:21:51', accuracy=4.87, completed=true}
Experiment{setup='Exp70       ', day=7, time='05:21:51', accuracy=4.87, completed=false}
Experiment{setup='Exp11       ', day=8, time='05:21:51', accuracy=3.22, completed=true}
Experiment{setup='Exp9        ', day=9, time='05:21:51', accuracy=6.22, completed=true}
```