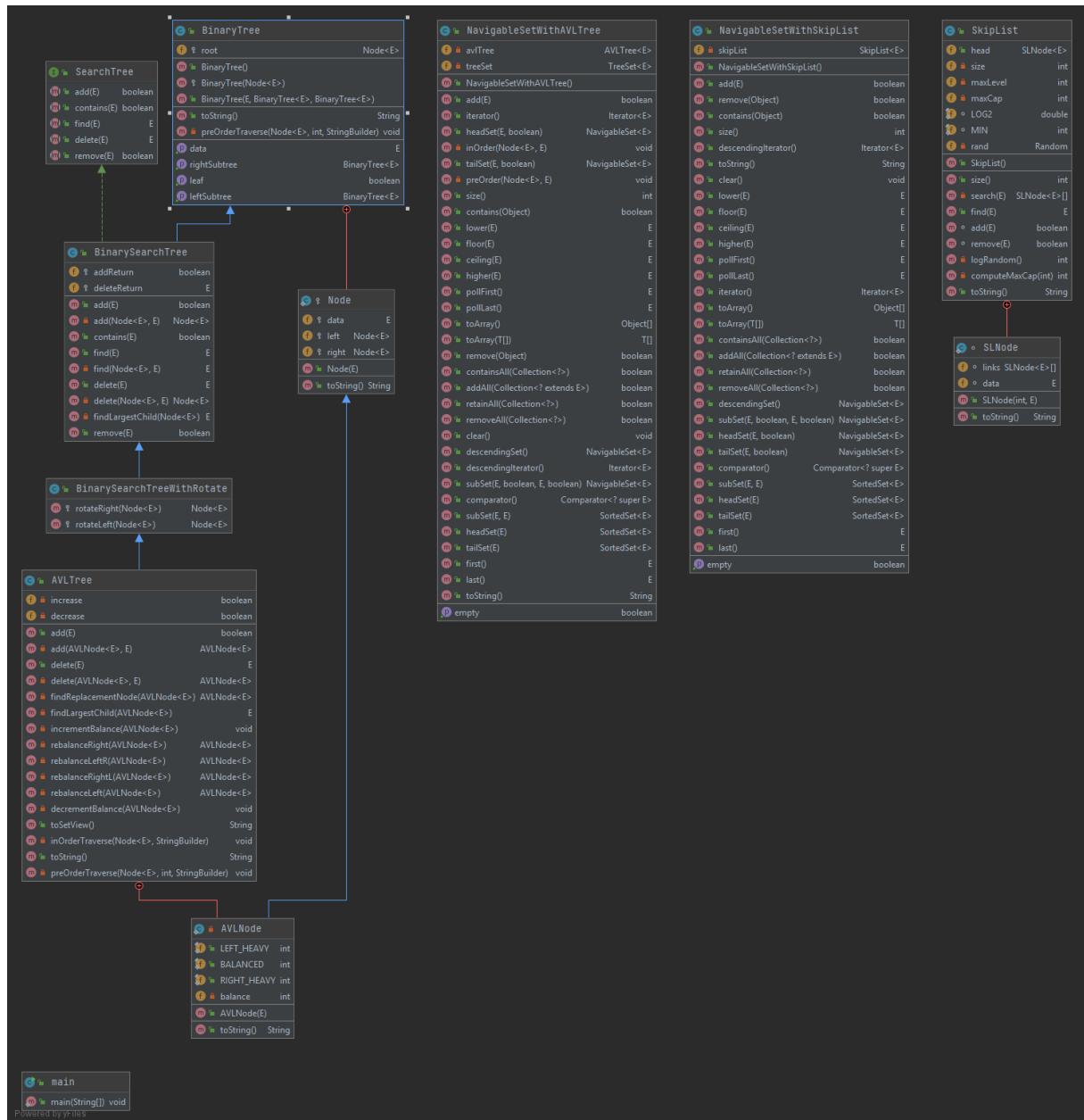


**GTU Department of Computer Engineering**  
**CSE 222/505 - Spring 2021**  
**Homework 7 – Part 1**

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# -Class Diagram



## -Running and Results

```
*****
*** NavigableSetWithAVLTree ***
*****
--- Create NavigableSetWithAVLTree ---
[ ]
*****
Before adding the '0' to the set
[ ]
After adding the '0' to the set
[ 0 ]
*****
After adding some items: 1, 5, 6, 2, 3 ,4 ,10, 13, 45
[ 0 1 2 3 4 5 6 10 13 45 ]
*****
Before adding the '1' to the set
[ 0 1 2 3 4 5 6 10 13 45 ]
After adding the '1' to the set
[ 0 1 2 3 4 5 6 10 13 45 ]
```

```
*****
-> headSet(3, true)
[0, 1, 2, 3]
-----
-> headSet(3, false)
[0, 1, 2]
-----
-> headSet(120, true)
[0, 1, 2, 3, 4, 5, 6, 10, 13, 45]
-----
-> headSet(120, false)
[0, 1, 2, 3, 4, 5, 6, 10, 13, 45]
-----
-> headSet(-5, true)
[]
-----
-> headSet(-5, false)
[]
```

```

*****
-> tailSet(3, true)
[3, 4, 5, 6, 10, 13, 45]
-----
-> tailSet(3, false)
[4, 5, 6, 10, 13, 45]
-----
-> tailSet(120, true)
[]
-----
-> tailSet(120, false)
[]
-----
-> tailSet(-5, true)
[0, 1, 2, 3, 4, 5, 6, 10, 13, 45]
-----
-> tailSet(-5, false)
[0, 1, 2, 3, 4, 5, 6, 10, 13, 45]

```

```

*****
*** NavigableSetWithSkipList ***
*****
--- Create NavigableSetWithSkipList ---
Empty
*****
Before adding the '0' to the set
Empty
After adding the '0' to the set
Head: 1 --> 0 |1|
*****
After adding some items: 1, 5, 6, 2, 3, 4, 10, 13, 45
Head: 4 --> 0 |1| --> 1 |2| --> 2 |3| --> 3 |3| --> 4 |1| --> 5 |1| --> 6 |1| --> 10 |1| --> 13 |1| --> 45 |1|

*****
Before removing the '3' from the set
Head: 4 --> 0 |1| --> 1 |2| --> 2 |3| --> 3 |3| --> 4 |1| --> 5 |1| --> 6 |1| --> 10 |1| --> 13 |1| --> 45 |1|

Size: 10
After removing the '3' from the set
Head: 4 --> 0 |1| --> 1 |2| --> 2 |3| --> 4 |1| --> 5 |1| --> 6 |1| --> 10 |1| --> 13 |1| --> 45 |1|
Size: 9
*****
Before removing the '30' from the set
Head: 4 --> 0 |1| --> 1 |2| --> 2 |3| --> 4 |1| --> 5 |1| --> 6 |1| --> 10 |1| --> 13 |1| --> 45 |1|
Size: 9
After removing the '30' from the set
Head: 4 --> 0 |1| --> 1 |2| --> 2 |3| --> 4 |1| --> 5 |1| --> 6 |1| --> 10 |1| --> 13 |1| --> 45 |1|
Size: 9

```