- Don't forget to set your Eclipse workspace and working set.
- You must submit the JAR file, exported (with source code), from your Eclipse project.
- You must check your JAR file to make sure all the source files (.java files) are present. It can be opened with file compression programs such as 7-zip or Winrar.
- Failure to export properly will result in your work not getting marked.

To submit:

- Export your project to a JAR file, with source code.
- Name your JAR file ID_Week14_Q1.jar. For example, 6623110021_Week14_Q1.jar
- Submit the JAR file on MyCourseville.

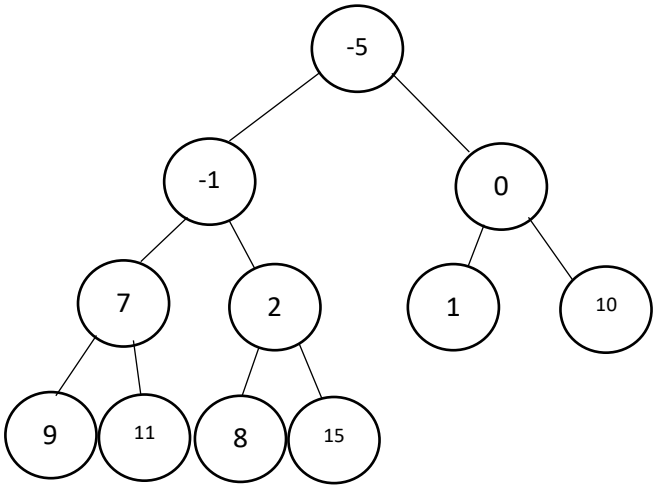
1. (5 marks) You are given code for minheap (small values are important) and JUnit to test your code.

- Assume that:
  - before "add" method is called, the heap has its largest data stored in position (size-1).
  - Method "pop" is never called.

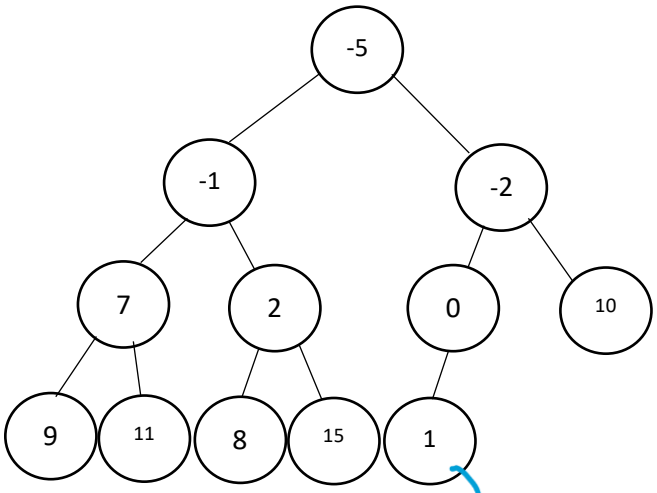
We want to modify the code of the method **"add"** of this heap such that:

- each time it is called, it adds new value to the heap (as done for normal heap).
- Then it modifies the heap so that largest value is at position (size-1).
- The modified heap must remain a heap.
- You are **NOT allowed** to add new fields to Heap class. **If you do, you get 0 point**.
- You are **Not allowed** to modify any files apart from **Heap.java**. No other files should be added to the project. Otherwise the grader will not mark your file.
- You are allowed to write your own methods to help with this question.
- There are 5 test cases, each test case is 1 mark. The marking test cases will be different from the ones given to you.

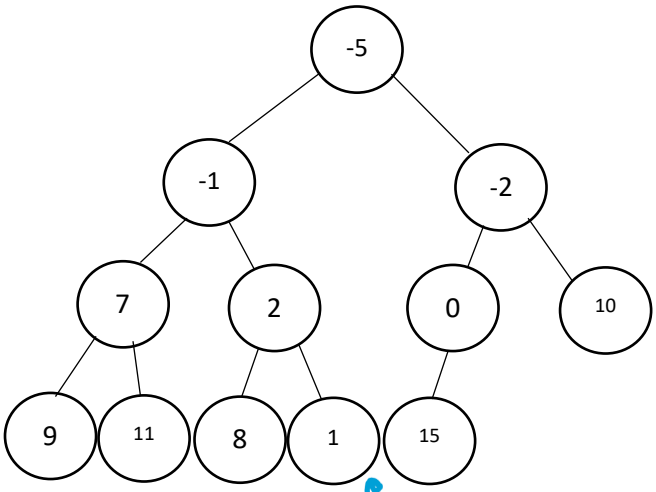
The following example illustrates how you **MUST** implement "add" in this question when adding -2 to the following heap (**If you do not use this algorithm, you get 0 point**):



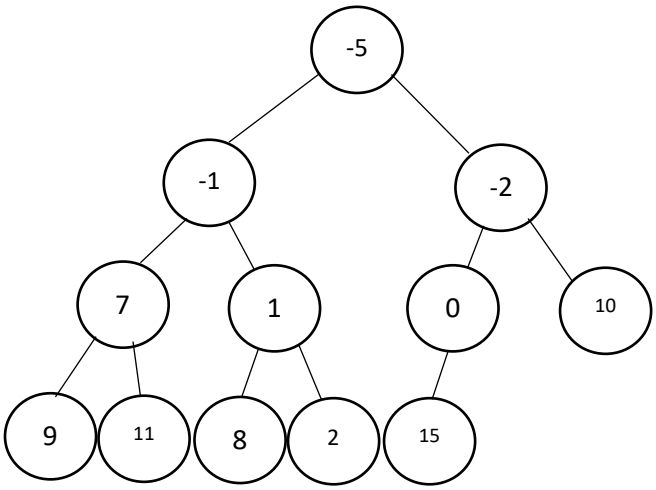

Add -2.
First, add and percolate normally.




If the last position does not contain the largest data, swap its data with the largest data.




Then percolate again as necessary.


-5
-1
-2
7
1
0
10
9
11
8
2
15