Midterm 30%

Make the package and named it Exam , for each question create the class and name Question1,Question2:

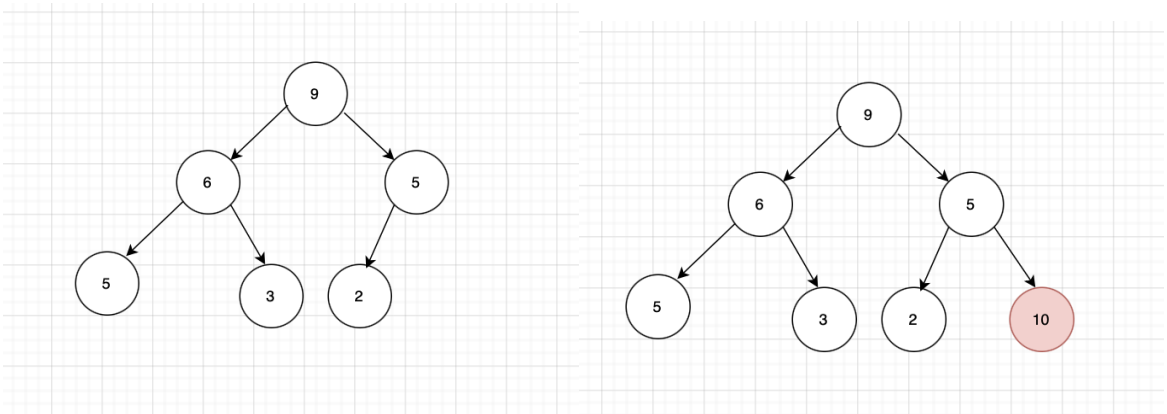
Question 1 : 15%

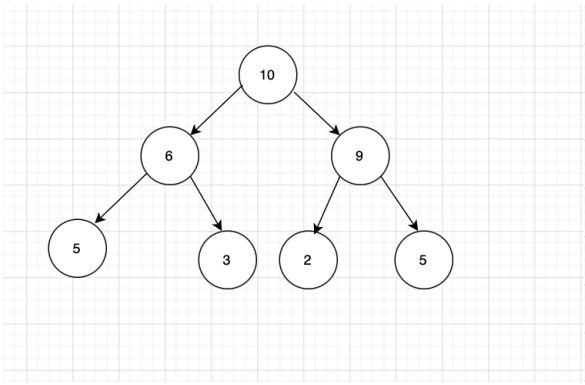
You are assigned to create a upward Heap(the parents is bigger than kids) from scratch (with array only) with given numbers from user.
As soon as you make the heap , ask from user to give you new value, and sort the heap again.
Find the min number in the heap, and remove it . then sort the heap again and print them.

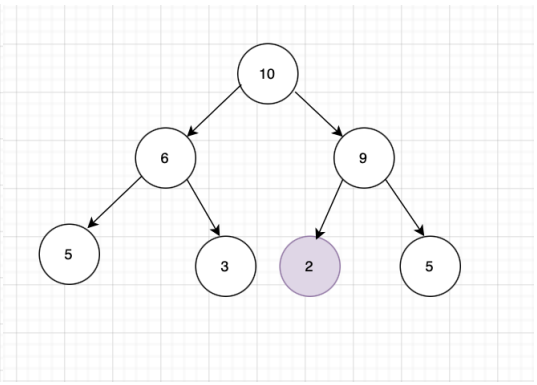
Here is the example of output :

Give me n:
6
Give me all of the :
3 5 2 5 6 9
Give me new value :
10
HEAP BEFORE ADD: 9 6 5 5 3 2
HEAP AFTER ADD: 10 6 9 5 3 2 5
Min: 2
HEAP AFTER REMOVE: 10 6 9 3 5 5

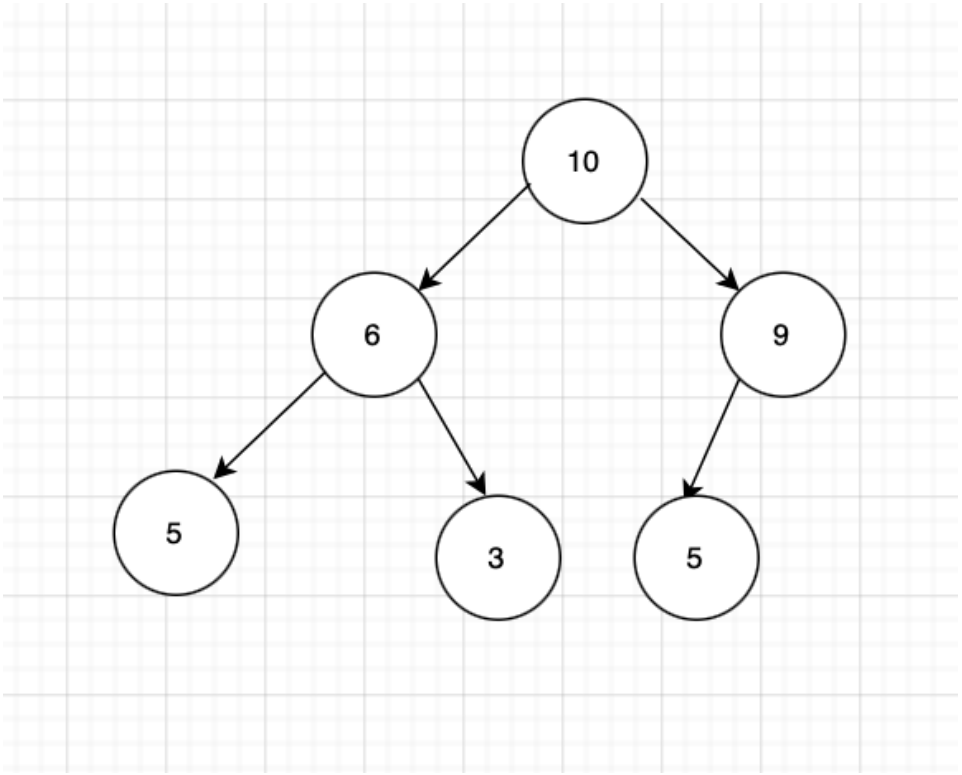
//this part is for your understanding:
Heap before adding element Heap After adding element







Final Heap :



Question 2 : 15%

You are assigned to write the program to get the string from user including “{“, “}”, “(“, “)”, “[“ and “]”. Then you have to make the data structure from scratch (you are only using array) to make sure this string is paired with matching: (Hint1 : the array’s siz is the **private static final int *SSIZE*** = 200;)

- correct: ( )(( )){([( )])}
- correct: ((( )(( )){([( )])}
- incorrect:)(( )){([( )])}
- incorrect: ({[ ])}
- incorrect: (

Hint2 : You allow to use pop and push in your data structure

Here is some input and out put :

Ex 1 :

Give me the string
{()))){
Error: Mismatch Detected!

Ex2 :

Give me the string
{([[]])}
Good: String is correct!