Exercise 4 Heap

In this exercise, you are not making a program. Instead, your pretend that you are a computer and perform the exercise in your head writing the results and steps on paper.

There is **in4.txt** input file that contain numbers (heap elements) separated by whitespaces.

Read the numbers from the file and create a heap. Insert an element by an element from left to right from the file to the heap. The minimum element must be in the root of the heap tree.

On paper, draw the heap tree after the first element is inserted, then the heap tree after the second element is inserted, etc. Draw the heap tree on each step including the final heap tree.

You may draw multiple trees on one page but large enough to be recognizable. Scan the pages and submit them (you can use any common file format, for example PDF or PNG).

Try to build heap from **in1.txt** – the resulting tree has to be as in **out1_sample.txt** file, the same is for

In2.txt – the resulting tree has to be as in **out2_sample.txt** file,

In3.txt – the resulting tree has to be as in **out3_sample.txt** file.

Input and Output Files

Each input file contains heap elements separated by whitespaces. All keys have to be read and processed until the end of file.

	Correspondent files	**Correspondent files**	**Correspondent files**	**Correspondent files**
Provided test input files	in1.txt	in2.txt	in3.txt	in4.txt
Provided sample output files	out1_sample.txt	out2_sample.txt	out3_sample.txt	**None** **Need to submit drawing**

Use the provided files to test your heaps. Check your heaps using all four test input files to produce three output files and create last heap (input from in4.txt file) and submit the all steps of creating heap (insert element by element from input file drawing and final drawing of the heap)

The format of the produced output files shall be similar to the provided sample output files. The heaps have to be the same.

There is no need to submit drawings for **in1.txt**, **in2.txt** or **in3.txt.**