# **Assignment for 11 September**

Last Modified: 9 September 2020

[Here](http://borax.truman.edu/310/0911/heapclient.cpp) is a program that requires a heap class to operate. It compiles and runs without errors if supplied with a correctly implemented heap class. [Here](http://borax.truman.edu/310/0911/template.h) is the framework of a heap class.

The first part of your assignment is to complete the heap class by fully implementing any methods that are not complete. You are welcome to create new public or private methods if you wish, but do not alter the prototype of any existing methods.

The second part of your assignment is to write a brief paper that theoretically and empirically analyzes the two functions push and pop. Use the same template that I gave you for assignment 0904. Your paper should include a separate plot, for push and pop, of the result of running your program with many different input sizes and input arrangements, together with the scaled standard functions that match your analysis. Axes and things plotted should be labeled. Be sure to address whether your analysis agrees with what we said in class, and if not, why not.

For math elements in your document, *use math mode* in LaTeX. For code elements (e.g., names of functions or variables) use the verb or texttt environments for inline material, and the Verbatim environment for multi-line code.

Due at noon on 11 September, submit three files: your class source code heap.h, your typeset pdf document, and the LaTeX source for the document.