

HOMEWORK: STL

(figure out how to use random numbers) between 0 and 1. Create a vector/list of n arrays (using the Standard Template Library) of 2×2 arrays using the Standard Template Library. The value of n will range from 10 up to one million (more or less). The idea is to use the `<algorithm>` from the Standard Template Library (STL), and in particular the `sort` routine. Read the documentation to figure out how to use it. The objective is to sort the list of arrays with respect to the second element of the 2×2 matrices.

Do the experiment in the following way:

1. use a `vector<ArrayT<float>>`
(note the space between the last two `>`)
2. use a `list<ArrayT<float>>`
3. use a `vector<ArrayT<float>*>`
4. use a `list<ArrayT<float>*>`

You must time the sort for each of the four cases above. Of course, if you do not have enough elements, the sort time will be too short to measure. Provide a table of timings for each of the four cases. Provide the average time per element (measure the time for the sort, and divide by the number of elements in the list).

Please provide a single pdf file for both problems with the output to your code and whatever explanations you care to provide. You will be graded on code documentation, presence of README, NOTES, INSTALL files, and benchmarks. All problems should be run a number of times large enough to make sure that timings do not give a number too close to zero as an answer.