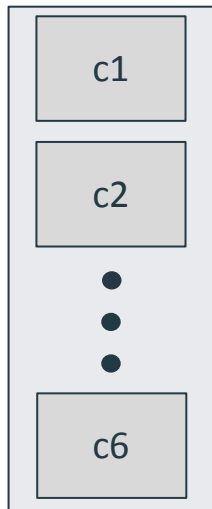
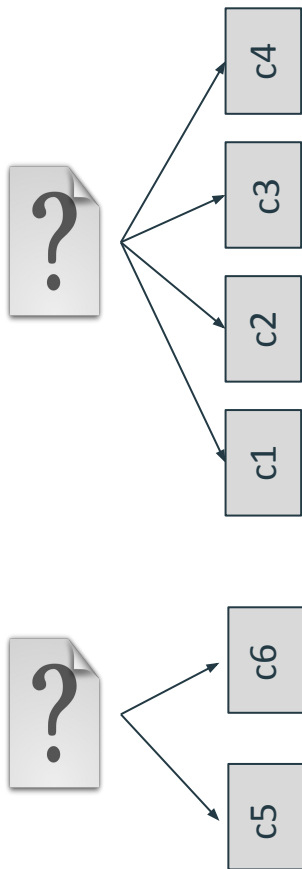


Text Processing & Integers Sorting

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Text Processing



For N Worker Threads:

- Divide all the files into N (perfect) chunks, and queue the chunks;
- Process each chunk on its own (each thread gets one chunk at a time, and each chunk is associated with a thread only);
- Merge the chunk statistics of a certain file, to that same file statistics;

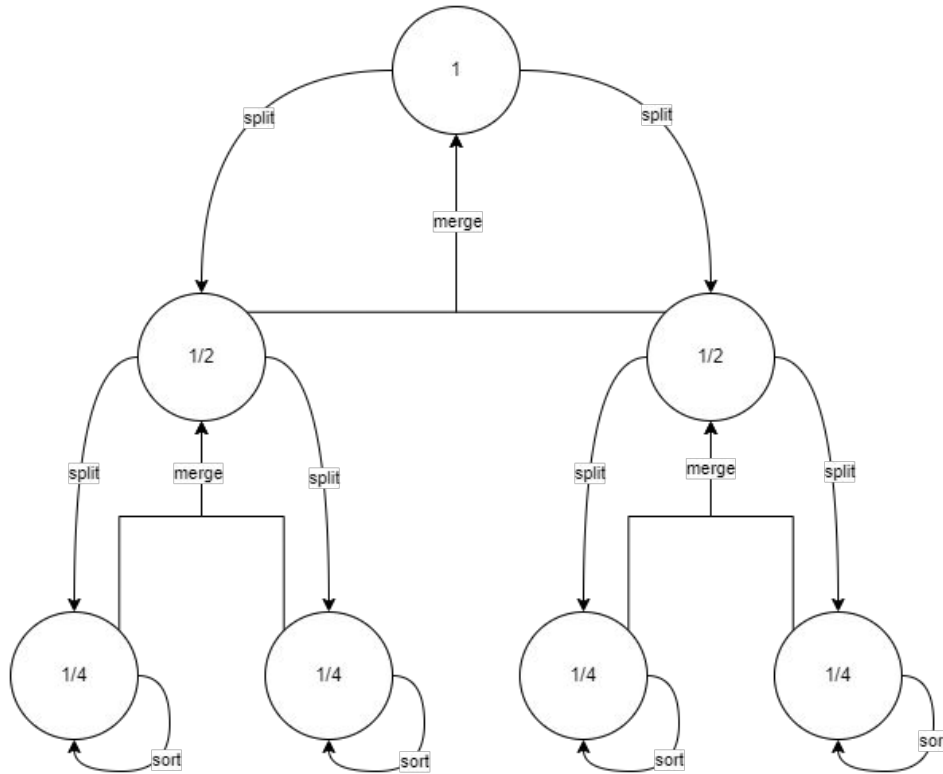
Work Distribution:

- The threads don't need to wait for the other threads, as the chunks are already perfectly distributed;

Text Processing - Results (all files)

Buffer/Chunk Size (Approximated values)	N of Threads	Time Elapsed (s)
4kb	1	0.240090s
	2	0.169359s
	4	0.145649s
	8	0.153942s
8kb	1	0.163494s
	2	0.115634s
	4	0.122564s
	8	0.107132s

Integers Sorting



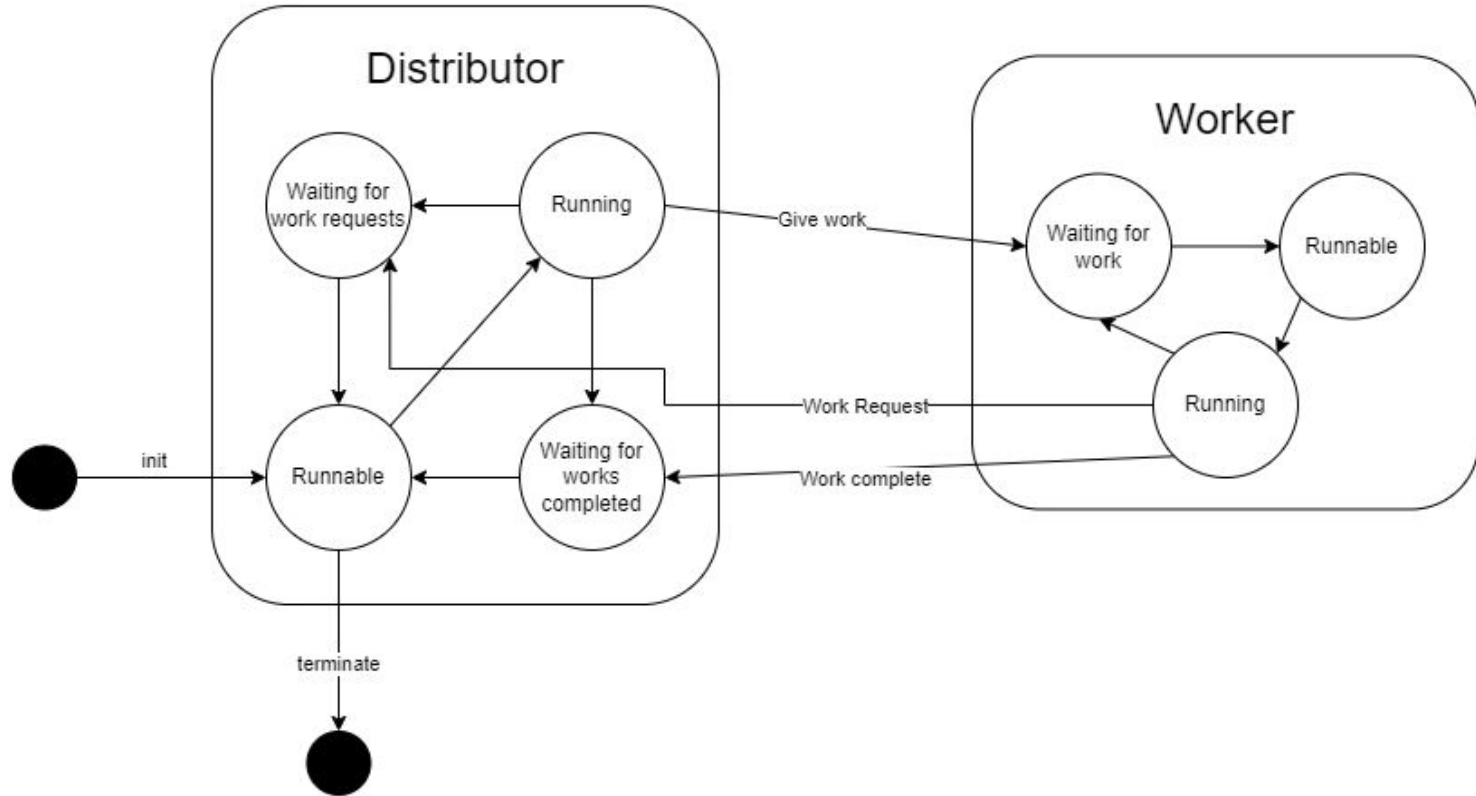
For N Worker Threads:

- Split array till we have N sub arrays
- Sort each of the subarrays
- Merge two by two till we have 1 again

Work Distribution:

- All operations are previously assigned to one of the threads
- Any merge action can be performed as long as the two previous operations have been completed
- Workers do not wait for everyone to finish their jobs but only those on whom their current job depends

Integers Sorting - Threads Sync



Integers Sorting - Results

N of Threads	1	2	4	8
datSeq32.bin				
Time (s)	0.000922	0.001125	0.002467	0.005016
datSeq256K.bin				
Time (s)	0.103347	0.057223	0.039969	0.042744
datSeq1M.bin				
Time (s)	0.447398	0.252200	0.192736	0.144992
datSeq16M.bin				
Time (s)	8.939759	4.966934	3.200288	2.705903