

Q: Perform the experiment. Tabulate the computing times in your homework report.

Round 1:

	left	bheap
n=100	0.000443	0.000464
n=500	0.000455	0.000521
n=1000	0.000467	0.000442
n=2000	0.000655	0.000429
n=3000	0.000414	0.000456
n=4000	0.000368	0.000438
n=5000	0.000432	0.000476

Round 2:

	left	bheap
n=100	0.000751	0.000466
n=500	0.000476	0.000443
n=1000	0.000374	0.000485
n=2000	0.000447	0.000430
n=3000	0.000388	0.000490
n=4000	0.000351	0.000436
n=5000	0.000362	0.000427

Round 3:

	left	bheap
n=100	0.000322	0.000419
n=500	0.000308	0.000466
n=1000	0.000357	0.000414
n=2000	0.000308	0.000430
n=3000	0.000317	0.000411
n=4000	0.000322	0.000414
n=5000	0.000313	0.000433

number of operation respectively after 3 rounds:

$(7 \times 5000 \times 3 / 2 \approx 52500)$

of leftist delete: 52542 # of leftist insert: 52458

of bheap delete: 52542 # of bheap insert: 52458

Q: Based on your experiments, make some statements about the relative merits of the two data structures?

In leftist tree, the operation is easier and simpler to perform, but it may sometimes cost up to nearly twice its average performance time.

In binominal heap, the operation is more complicated to perform, but the performance time binominal heap consumes is more steady than leftist tree.