

## Homework 6 Report

### Experiment Set 1 (variable : number of data element)

1. Numerical mode: True
2. Number of data element: N will be 100, 10000, 100000
3. Word length: 4
4. Max value: 10000
5. Alphabet set size: 26

when number of element N = 100		
	Comparison count	Execution time
q-sort	542	0.000010s
merge-sort	672	0.000647s
heap-sort	1244	0.000017s

when number of element N = 10000		
	Comparison count	Execution time
q-sort	120425	0.001918s
merge-sort	133616	0.002685s
heap-sort	290668	0.003007s

when number of element N = 100000		
	Comparison count	Execution time
q-sort	1536262	0.049915s
merge-sort	1668928	0.049557s
heap-sort	3737555	0.046134s

### Experiment Set 2 (variable : Max value)

1. Numerical mode: True
2. Number of data element: 10000
3. Word length: 4
4. Max value: N will be 100, 10000, 1000000
5. Alphabet set size: 26

when max value N = 100		
	Comparison count	Execution time
q-sort	120247	0.001214s
merge-sort	133616	0.003305s
heap-sort	287507	0.004593s

when max value N = 10000		
	Comparison count	Execution time
q-sort	120440	0.001493s
merge-sort	133616	0.002882s
heap-sort	290653	0.002994s

when max value N = 1000000		
	Comparison count	Execution time
q-sort	120479	0.001895s
merge-sort	133616	0.002550s
heap-sort	290477	0.003053s

### Experiment Set 3 (variable : Max value)

1. Numerical mode: True
2. Number of data element: 100
3. Word length: 4
4. Max value: N will be 100, 100000000
5. Alphabet set size: 26

when max value N = 100		
	Comparison count	Execution time
q-sort	529	0.000009s
merge-sort	672	0.000015s
heap-sort	1250	0.000014s

when max value N = 10000		
	Comparison count	Execution time
q-sort	526	0.000035s
merge-sort	672	0.000018s
heap-sort	1255	0.00s