n	UF_DEPTH	UF_LOOPS	UF_HWQUPC
1000	0.23	0.34	0.2
2000	0.35	0.48	0.28
4000	0.56	1.36	0.46
8000	1.08	2.61	1.03
16000	2.53	4.68	2.31
32000	5.36	9.67	5.2
64000	11.86	21.9	11.62
128000	28.58	47.39	28.6
256000	64.12	102.71	64.07

Conclusion:

1. For weighted quick union, no matter storing the depth or the size, these two algorithms have similar running time. Because both two algorithms connect smaller/shallower tree to the bigger/deeper one, making the tree flatten.

2. For path compression, if do two loops, there'll be a poor performance than doing the normal path compression.