**INFO 6205**

**Program Structures & Algorithms**

**Fall 2020**

**Assignment 5**

* **Task and Observations**

N=2,000,000

Thread Count = 1, 4, 10, 100, 1000

Cutoff = between 500,000 and 1,000,000

* **Output**

*When Thread count = 1*

cutoff：510000 10times Time:4019ms

cutoff：520000 10times Time:3451ms

cutoff：530000 10times Time:2881ms

cutoff：540000 10times Time:3376ms

cutoff：550000 10times Time:2523ms

cutoff：560000 10times Time:3340ms

cutoff：570000 10times Time:2815ms

cutoff：580000 10times Time:3101ms

cutoff：590000 10times Time:3041ms

cutoff：600000 10times Time:4081ms

cutoff：610000 10times Time:3806ms

cutoff：620000 10times Time:4126ms

cutoff：630000 10times Time:4179ms

cutoff：640000 10times Time:4630ms

cutoff：650000 10times Time:4479ms

cutoff：660000 10times Time:4873ms

cutoff：670000 10times Time:4765ms

cutoff：680000 10times Time:4084ms

cutoff：690000 10times Time:4877ms

cutoff：700000 10times Time:4729ms

cutoff：710000 10times Time:3044ms

cutoff：720000 10times Time:4714ms

cutoff：730000 10times Time:5365ms

cutoff：740000 10times Time:4808ms

cutoff：750000 10times Time:4814ms

cutoff：760000 10times Time:4909ms

cutoff：770000 10times Time:5112ms

cutoff：780000 10times Time:5245ms

cutoff：790000 10times Time:5095ms

cutoff：800000 10times Time:4988ms

cutoff：810000 10times Time:5074ms

cutoff：820000 10times Time:4805ms

cutoff：830000 10times Time:4744ms

cutoff：840000 10times Time:4583ms

cutoff：850000 10times Time:3450ms

cutoff：860000 10times Time:3100ms

cutoff：870000 10times Time:3956ms

cutoff：880000 10times Time:4675ms

cutoff：890000 10times Time:4640ms

cutoff：900000 10times Time:4821ms

cutoff：910000 10times Time:4763ms

cutoff：920000 10times Time:3542ms

cutoff：930000 10times Time:3079ms

cutoff：940000 10times Time:5282ms

cutoff：950000 10times Time:4948ms

cutoff：960000 10times Time:4320ms

cutoff：970000 10times Time:2758ms

cutoff：980000 10times Time:4087ms

cutoff：990000 10times Time:5410ms

cutoff：1000000 10times Time:4983ms

*When Thread count = 100*

cutoff：510000 10times Time:1607ms

cutoff：520000 10times Time:1323ms

cutoff：530000 10times Time:1406ms

cutoff：540000 10times Time:1342ms

cutoff：550000 10times Time:2266ms

cutoff：560000 10times Time:2559ms

cutoff：570000 10times Time:2680ms

cutoff：580000 10times Time:2563ms

cutoff：590000 10times Time:2914ms

cutoff：600000 10times Time:1373ms

cutoff：610000 10times Time:1315ms

cutoff：620000 10times Time:1252ms

cutoff：630000 10times Time:1258ms

cutoff：640000 10times Time:1200ms

cutoff：650000 10times Time:1226ms

cutoff：660000 10times Time:1430ms

cutoff：670000 10times Time:1281ms

cutoff：680000 10times Time:1384ms

cutoff：690000 10times Time:1304ms

cutoff：700000 10times Time:1317ms

cutoff：710000 10times Time:1296ms

cutoff：720000 10times Time:1410ms

cutoff：730000 10times Time:1352ms

cutoff：740000 10times Time:1464ms

cutoff：750000 10times Time:1304ms

cutoff：760000 10times Time:1345ms

cutoff：770000 10times Time:1230ms

cutoff：780000 10times Time:1312ms

cutoff：790000 10times Time:1184ms

cutoff：800000 10times Time:1363ms

cutoff：810000 10times Time:1234ms

cutoff：820000 10times Time:1292ms

cutoff：830000 10times Time:1274ms

cutoff：840000 10times Time:1266ms

cutoff：850000 10times Time:1298ms

cutoff：860000 10times Time:1263ms

cutoff：870000 10times Time:1436ms

cutoff：880000 10times Time:1314ms

cutoff：890000 10times Time:1339ms

cutoff：900000 10times Time:1290ms

cutoff：910000 10times Time:1358ms

cutoff：920000 10times Time:1307ms

cutoff：930000 10times Time:1269ms

cutoff：940000 10times Time:1273ms

cutoff：950000 10times Time:1386ms

cutoff：960000 10times Time:1352ms

cutoff：970000 10times Time:1246ms

cutoff：980000 10times Time:1250ms

cutoff：990000 10times Time:1378ms

cutoff：1000000 10times Time:1548ms

*When Thread count = 4000*

cutoff：510000 10times Time:1814ms

cutoff：520000 10times Time:1398ms

cutoff：530000 10times Time:1426ms

cutoff：540000 10times Time:1327ms

cutoff：550000 10times Time:2577ms

cutoff：560000 10times Time:2669ms

cutoff：570000 10times Time:2668ms

cutoff：580000 10times Time:2517ms

cutoff：590000 10times Time:1309ms

cutoff：600000 10times Time:1377ms

cutoff：610000 10times Time:1261ms

cutoff：620000 10times Time:1283ms

cutoff：630000 10times Time:1364ms

cutoff：640000 10times Time:1296ms

cutoff：650000 10times Time:1459ms

cutoff：660000 10times Time:1545ms

cutoff：670000 10times Time:1254ms

cutoff：680000 10times Time:1318ms

cutoff：690000 10times Time:1242ms

cutoff：700000 10times Time:1279ms

cutoff：710000 10times Time:1418ms

cutoff：720000 10times Time:1354ms

cutoff：730000 10times Time:1281ms

cutoff：740000 10times Time:1582ms

cutoff：750000 10times Time:2799ms

cutoff：760000 10times Time:2880ms

cutoff：770000 10times Time:2701ms

cutoff：780000 10times Time:2696ms

cutoff：790000 10times Time:2848ms

cutoff：800000 10times Time:2863ms

cutoff：810000 10times Time:2945ms

cutoff：820000 10times Time:2892ms

cutoff：830000 10times Time:2899ms

cutoff：840000 10times Time:3014ms

cutoff：850000 10times Time:2880ms

cutoff：860000 10times Time:1745ms

cutoff：870000 10times Time:1438ms

cutoff：880000 10times Time:1377ms

cutoff：890000 10times Time:1568ms

cutoff：900000 10times Time:1448ms

cutoff：910000 10times Time:1574ms

cutoff：920000 10times Time:1478ms

cutoff：930000 10times Time:1532ms

cutoff：940000 10times Time:1505ms

cutoff：950000 10times Time:1632ms

cutoff：960000 10times Time:1603ms

cutoff：970000 10times Time:1624ms

cutoff：980000 10times Time:1534ms

cutoff：990000 10times Time:1476ms

cutoff：1000000 10times Time:1622ms

* **Relationship conclusion**
* **Evidence to support relationship**