

MP3 Report

1. Output:

(1) Histogram:

Histogram											
Name	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	Total
Joe Doe	1091	992	1072	916	1000	956	1011	971	1010	981	10000
Jane Smith	957	987	1024	995	1002	983	953	1054	1020	1025	10000
John Smith	987	978	1009	994	953	1028	1016	1000	994	1041	10000

(2) Performance:

The total time is:10.9355s

2. Measure the performance of the system with varying numbers of worker threads and sizes of the buffer.

Default: -n 10000 -w 10 -b 100

(1) Only increase numbers of worker threads

Number of worker threads	Total time
10	10.9409s
15	7.33623s
20	5.52317s
25	5.14366s
30	4.46089s

(2) Only increase the size of the buffer

Size of the buffer	Total time
100	10.9409s
200	10.9727s
300	10.9461s
400	10.9544s
500	10.9474s

Questions:

(1) Does increasing the number of worker threads improve the performance? By how much?

Increasing the number of worker threads improves the performance.

When the number of the worker threads increases from 10-30, the total time decreases from 10.9409s to 4.46089s.

(3) Does increasing the size of the buffer improve the performance?

Increasing the size of the buffer doesn't improve the performance.

(2) Is there a point at which increasing the number of worker threads does not further improve performance?

For my laptop, When the number of worker threads get to 35, the performance will not go further.