|  |  |  |  |
| --- | --- | --- | --- |
| Serial execution time (microseconds) | Number of threads | Parallel execution time (microseconds) | Speedup |
| 18191 | 2 | 33057 | 0.550292 |
| 19774 | 4 | 22666 | 0.872408 |
| 18353 | 6 | 13376 | 1.372084 |
| 18258 | 8 | 12937 | 1.411301 |
| 18481 | 10 | 11737 | 1.574593 |
| 18380 | 12 | 13612 | 1.350279 |
| 18289 | 14 | 10312 | 1.773565 |
| 18302 | 16 | 10916 | 1.676621 |

**Implementation Details:**

Task[0] contains the word list “a” and Task[1] contains the word list “b” and so on.

All the 26 Tasks are almost equally shared with the given number of Workers.

Unique Words with length >= 6 is written in to File, after worker process computes the unique words. The unique word (with length >=6) index is found by the worker and store those indices, using these indices those words are written into the file.

**Logs for Parallel Execution:**

-bash-4.2$ srun -n1 -c1 ./BagOfTaskParallel.out abc.txt 2

Total Number of UniqueWordFound = 57264

Worker 0 has Found 31862 UniqueWords

Worker 1 has Found 25402 UniqueWords

Ellapsed Time for Compute Phase:->33057 microseconds occured

-bash-4.2$ srun -n1 -c2 ./BagOfTaskParallel.out abc.txt 4

Total Number of UniqueWordFound = 57264

Worker 0 has Found 21840 UniqueWords

Worker 1 has Found 11010 UniqueWords

Worker 2 has Found 18141 UniqueWords

Worker 3 has Found 6273 UniqueWords

Ellapsed Time for Compute Phase:->22666 microseconds occured

-bash-4.2$ srun -n1 -c3 ./BagOfTaskParallel.out abc.txt 6

Total Number of UniqueWordFound = 57264

Worker 0 has Found 16596 UniqueWords

Worker 1 has Found 9458 UniqueWords

Worker 2 has Found 6796 UniqueWords

Worker 3 has Found 9187 UniqueWords

Worker 4 has Found 12734 UniqueWords

Worker 5 has Found 2493 UniqueWords

Ellapsed Time for Compute Phase:->13376 microseconds occured

-bash-4.2$ srun -n1 -c4 ./BagOfTaskParallel.out abc.txt 8

Total Number of UniqueWordFound = 57264

Worker 0 has Found 15142 UniqueWords

Worker 1 has Found 8883 UniqueWords

Worker 2 has Found 2932 UniqueWords

Worker 3 has Found 5893 UniqueWords

Worker 4 has Found 6919 UniqueWords

Worker 5 has Found 11222 UniqueWords

Worker 6 has Found 5470 UniqueWords

Worker 7 has Found 803 UniqueWords

Ellapsed Time for Compute Phase:->12937 microseconds occurred

-bash-4.2$ srun -n1 -c4 ./BagOfTaskParallel.out abc.txt 10

Total Number of UniqueWordFound = 57264

Worker 0 has Found 12123 UniqueWords

Worker 1 has Found 7455 UniqueWords

Worker 2 has Found 5649 UniqueWords

Worker 3 has Found 3761 UniqueWords

Worker 4 has Found 5728 UniqueWords

Worker 5 has Found 7321 UniqueWords

Worker 6 has Found 8954 UniqueWords

Worker 7 has Found 3780 UniqueWords

Worker 8 has Found 1784 UniqueWords

Worker 9 has Found 709 UniqueWords

Ellapsed Time for Compute Phase:->11737 microseconds occurred

-bash-4.2$ srun -n1 -c4 ./BagOfTaskParallel.out abc.txt 14

Total Number of UniqueWordFound = 57264

Worker 0 has Found 6960 UniqueWords

Worker 1 has Found 8182 UniqueWords

Worker 2 has Found 4436 UniqueWords

Worker 3 has Found 4447 UniqueWords

Worker 4 has Found 2029 UniqueWords

Worker 5 has Found 2934 UniqueWords

Worker 6 has Found 3862 UniqueWords

Worker 7 has Found 6514 UniqueWords

Worker 8 has Found 2673 UniqueWords

Worker 9 has Found 8954 UniqueWords

Worker 10 has Found 3780 UniqueWords

Worker 11 has Found 1784 UniqueWords

Worker 12 has Found 411 UniqueWords

Worker 13 has Found 298 UniqueWords

Ellapsed Time for Compute Phase:->10312 microseconds occured

-bash-4.2$ srun -n1 -c4 ./BagOfTaskParallel.out abc.txt 16

Total Number of UniqueWordFound = 57264

Worker 0 has Found 6960 UniqueWords

Worker 1 has Found 8182 UniqueWords

Worker 2 has Found 4436 UniqueWords

Worker 3 has Found 4447 UniqueWords

Worker 4 has Found 2029 UniqueWords

Worker 5 has Found 2934 UniqueWords

Worker 6 has Found 3862 UniqueWords

Worker 7 has Found 6514 UniqueWords

Worker 8 has Found 2673 UniqueWords

Worker 9 has Found 8954 UniqueWords

Worker 10 has Found 2735 UniqueWords

Worker 11 has Found 1045 UniqueWords

Worker 12 has Found 1690 UniqueWords

Worker 13 has Found 94 UniqueWords

Worker 14 has Found 411 UniqueWords

Worker 15 has Found 298 UniqueWords

Ellapsed Time for Compute Phase:->10916 microseconds occurred

**Serial Execution Log:**

-bash-4.2$ ./BagOfTaskSerial.out abc.txt 14

Total Number of UniqueWordFound = 57264

Worker 0 has Found 6960 UniqueWords

Worker 1 has Found 8182 UniqueWords

Worker 2 has Found 4436 UniqueWords

Worker 3 has Found 4447 UniqueWords

Worker 4 has Found 2029 UniqueWords

Worker 5 has Found 2934 UniqueWords

Worker 6 has Found 3862 UniqueWords

Worker 7 has Found 6514 UniqueWords

Worker 8 has Found 2673 UniqueWords

Worker 9 has Found 8954 UniqueWords

Worker 10 has Found 3780 UniqueWords

Worker 11 has Found 1784 UniqueWords

Worker 12 has Found 411 UniqueWords

Worker 13 has Found 298 UniqueWords

Ellapsed Time for Compute Phase18289 microseconds occured

-bash-4.2$ ./BagOfTaskSerial.out abc.txt 16

Total Number of UniqueWordFound = 57264

Worker 0 has Found 6960 UniqueWords

Worker 1 has Found 8182 UniqueWords

Worker 2 has Found 4436 UniqueWords

Worker 3 has Found 4447 UniqueWords

Worker 4 has Found 2029 UniqueWords

Worker 5 has Found 2934 UniqueWords

Worker 6 has Found 3862 UniqueWords

Worker 7 has Found 6514 UniqueWords

Worker 8 has Found 2673 UniqueWords

Worker 9 has Found 8954 UniqueWords

Worker 10 has Found 2735 UniqueWords

Worker 11 has Found 1045 UniqueWords

Worker 12 has Found 1690 UniqueWords

Worker 13 has Found 94 UniqueWords

Worker 14 has Found 411 UniqueWords

Worker 15 has Found 298 UniqueWords

Ellapsed Time for Compute Phase18302 microseconds occured