Assignment-2

TWO WAY MERGE SORT

Configuration of the system used:

Main Memory : 8GB
Quad Core i5 Processor.

Observations:

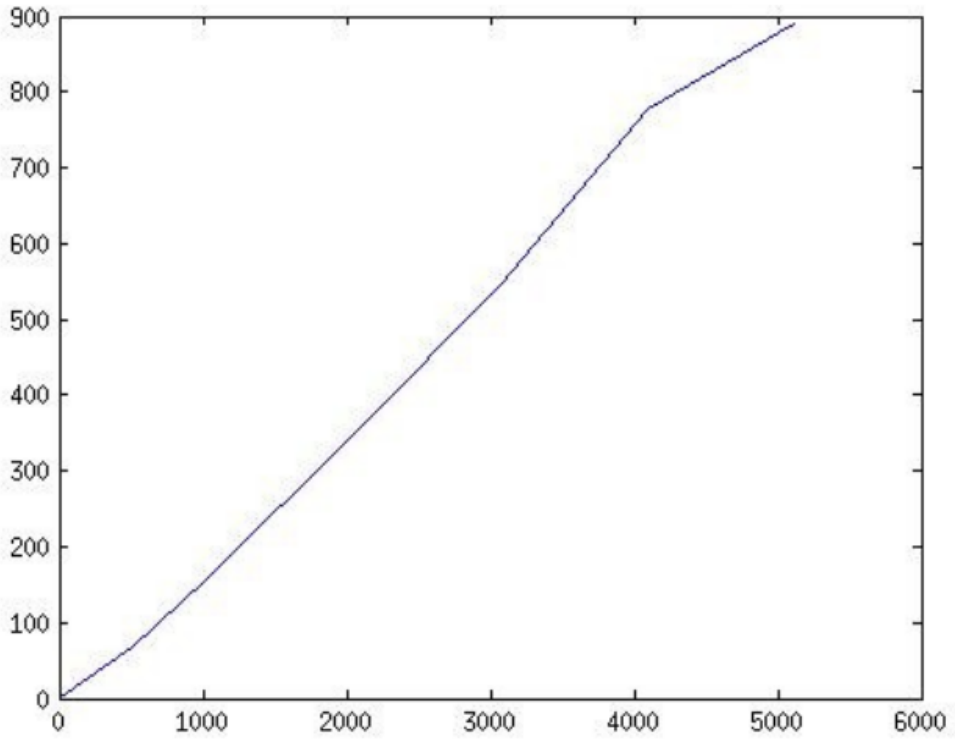
Sorting is done in the order of c0,c1,c2.
Main memory=100MB

FILE SIZE	TIME(Real time)
5MB	0.561s
50 MB	4.350s
500MB	40.128s
1GB	1:25.320s
2GB	4:51.100s
3GB	8:24.440

The increase in time is the ratio of sizes(approx) till 1GB file.After the increase in large.This is Because Disk I/o will be done for only some files and only some part of main memory is used in second phase of merge sort.
File Size=512MB

The graph is as below:

x-axis file size , y-axis time:

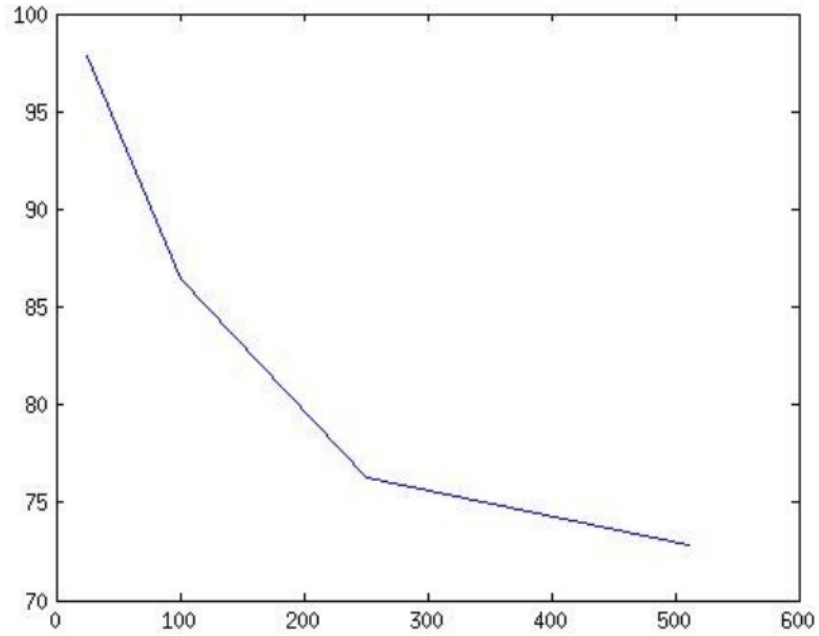


MAIN MEMORY	TIME(User Time)
25MB	55.101s
100MB	43.236s
250MB	50.468s
512MB	10:24:622s

From 25MB to 100MB it is decreased.For this two the main memory is completely used.from 100MB to 250MB there is increase in time.This

happens because main memory is not used completely for second phase of merge sort.From 250MB to 512MB there is a large increase because the main memory used for this is too less(only one byte).

The graph is as below:



this is the plot for memory versus time:
x-axis memory and y-axis time

EXPLANATION:

-->Error Handling

-->Dividing in to sublists and writing in to new created files.where max number of records is main memory size/tuplesize.this takes one disk I/O. Used merge sort to sort all the records.

-->Using filepointers got all elements in to new list.From that list finding minimum and writing to output file.Updating the list according to minimum.

1)Buffer size=size of one tuple. 2)Total Buffers=Total number of files.