SYSTEM CONFIGURATIONS :

Processor : Intel® Core™ i5-10300H CPU @ 2.50GHz × 8
Memory : 7.6 GiB
OS : Ubuntu 20.04.2 LTS
Disk Capacity : 1.0 TB

Relations taken
R – No of tuples 40000
  Two columns (X : size – 5, Y : size - 10)
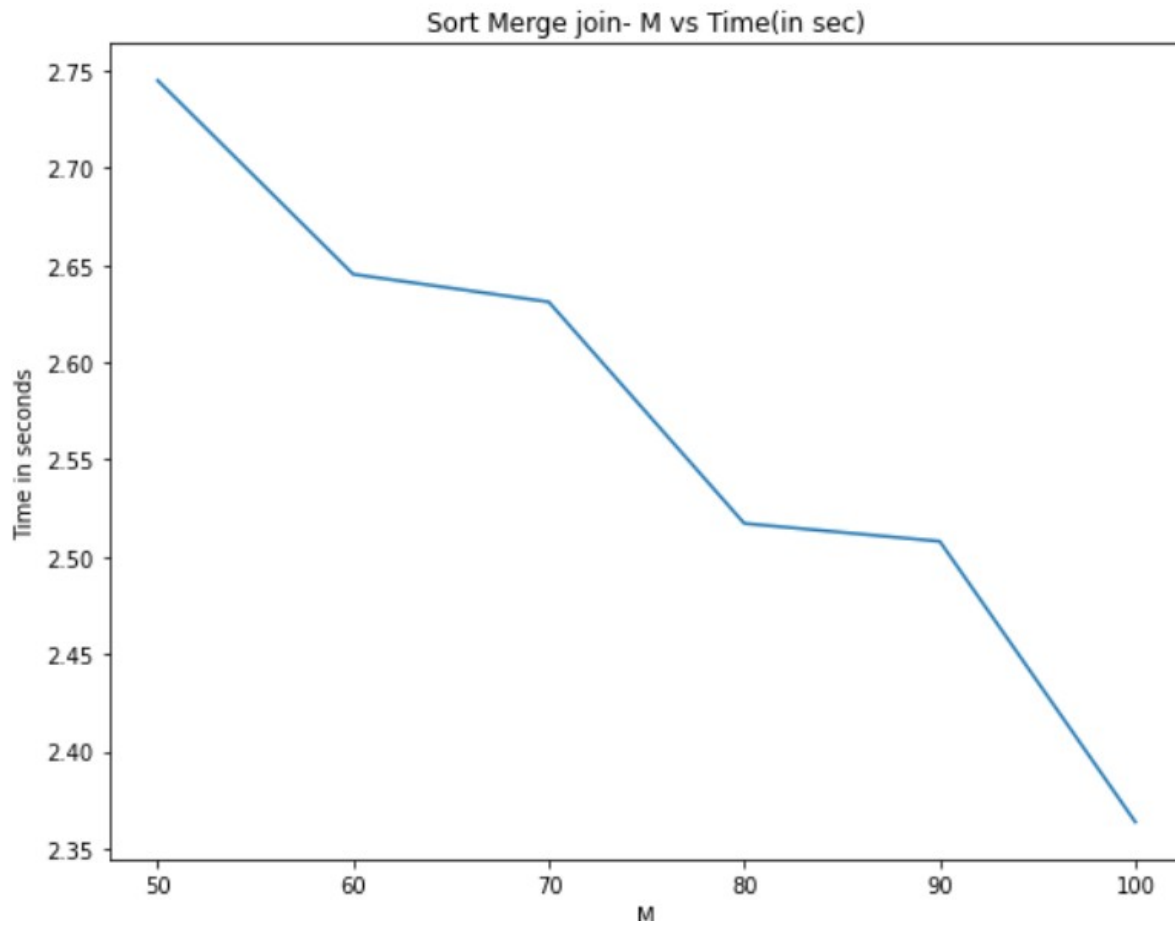**S – No of tuples 50000**
  Two columns (Y : size – 10, Y : size – 15)

Output file : join of R and S

Comparison

ALGO: SORT MERGE JOIN SIZE OF R: 40000 SIZE OF S: 50000	
M	Time taken in seconds
50	2.74484395980835
60	2.64521837234497
70	2.63100576400757
80	2.51714682579041
90	2.50794506072998
100	2.36367416381836

GRAPH

Sort Merge join- M vs Time(in sec)

ALGO: HASH JOIN SIZE OF R: 40000 SIZE OF S: 50000	
M	Time taken in seconds
50	0.293467521667481
60	0.308394432067871
70	0.288764715194702
80	0.296599626541138
90	0.298675775527954
100	0.294010400772095

Hash join- M vs Time(in sec)