

DATABASE SYSTEMS

PROJECT-DELIVERABLE 2

IMPLEMENTING A DATABASE SYSTEM

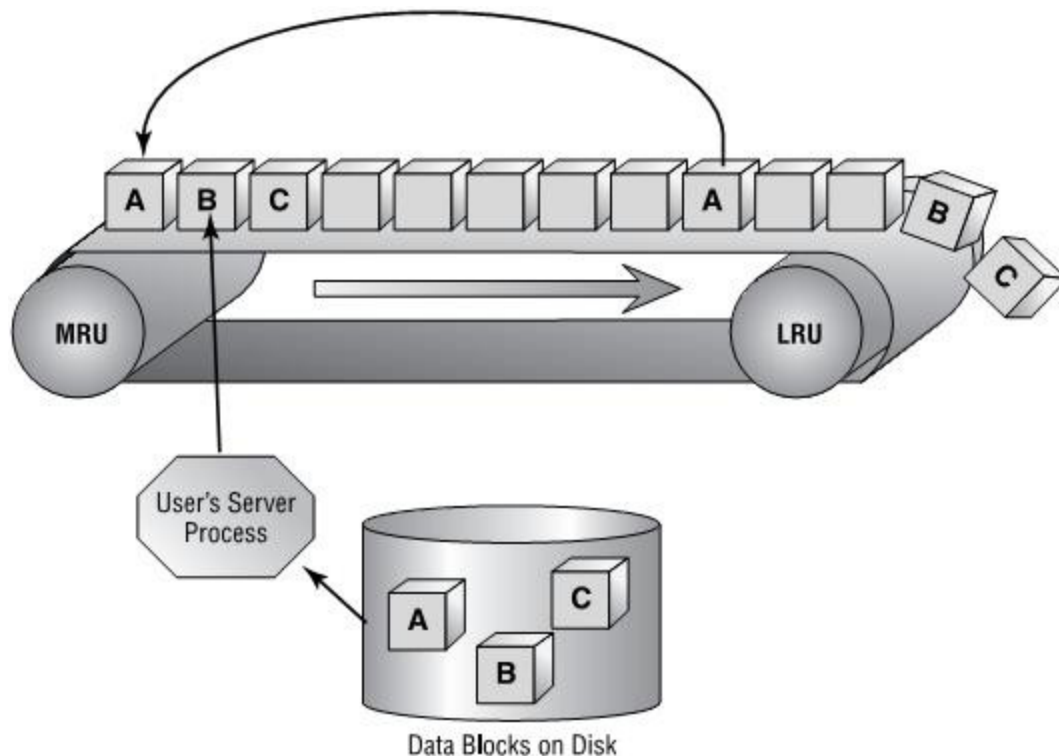
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Least Recently Used : It discards the least recently used items first. The items which are least recently used in the main memory(cache) are discarded first.

Page Faults : It is the count of number of times you do not find a particular page in your main memory cache. More are the number of misses, more is the page fault.

The parameters like pagesize and number of pages are the major reason which effect the number of page faults. If we have high pagesize, more records will fit in a page. Which increases the probability of a hit when you look up for a record. Similarly, if we have more number of pages, we have more number of pages in our main memory which also increases the probability of hits.

So, we can conclude that having high pagesize and more number of pages, we can decrease the number of page faults. At the same time, we cannot have very high pagesize and more number of pages as more time is required for searching in the main memory.

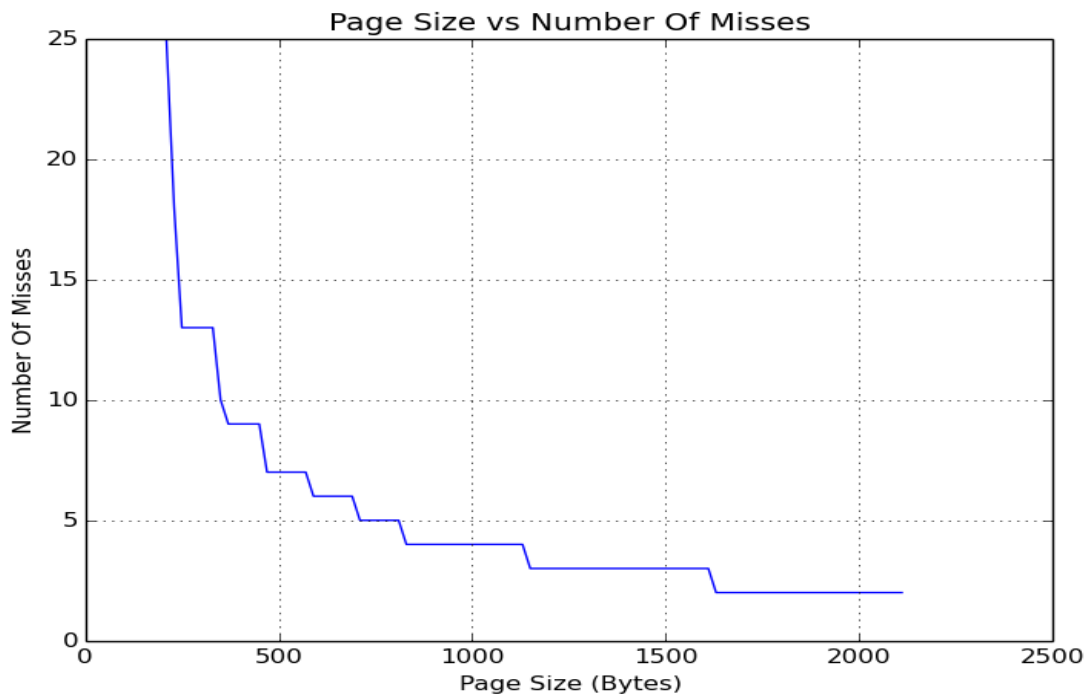
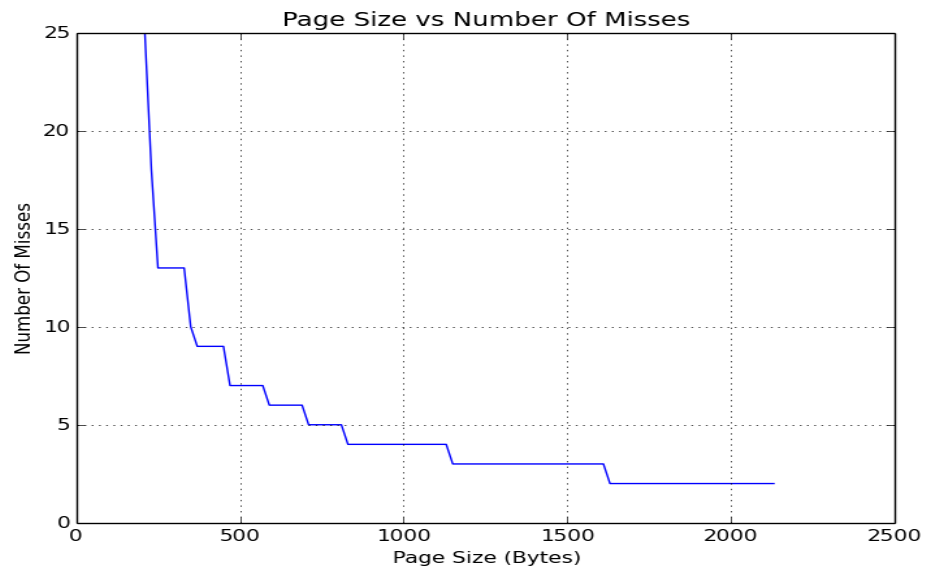


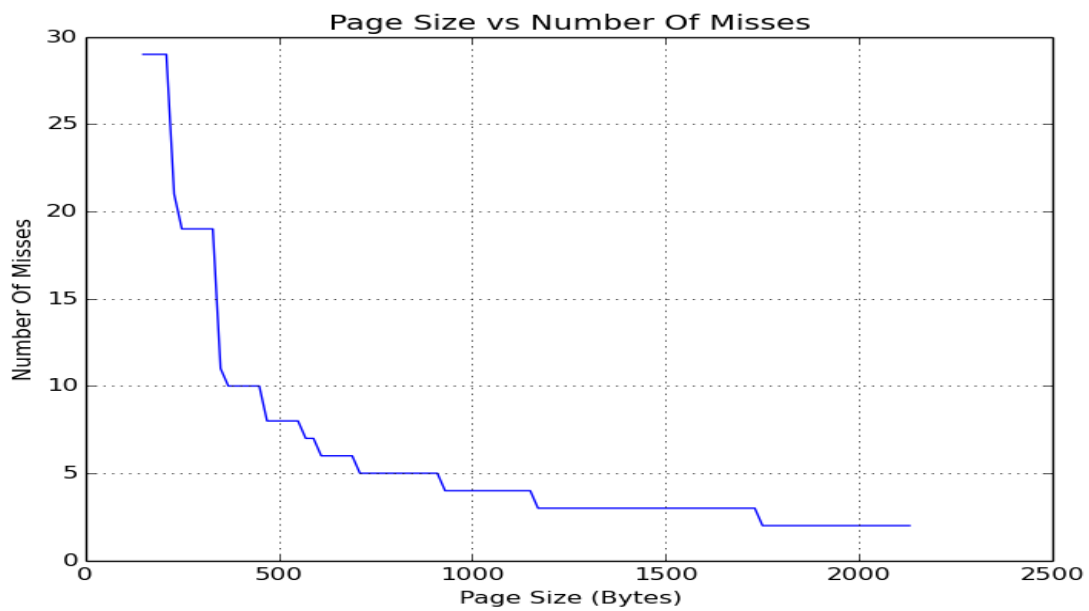
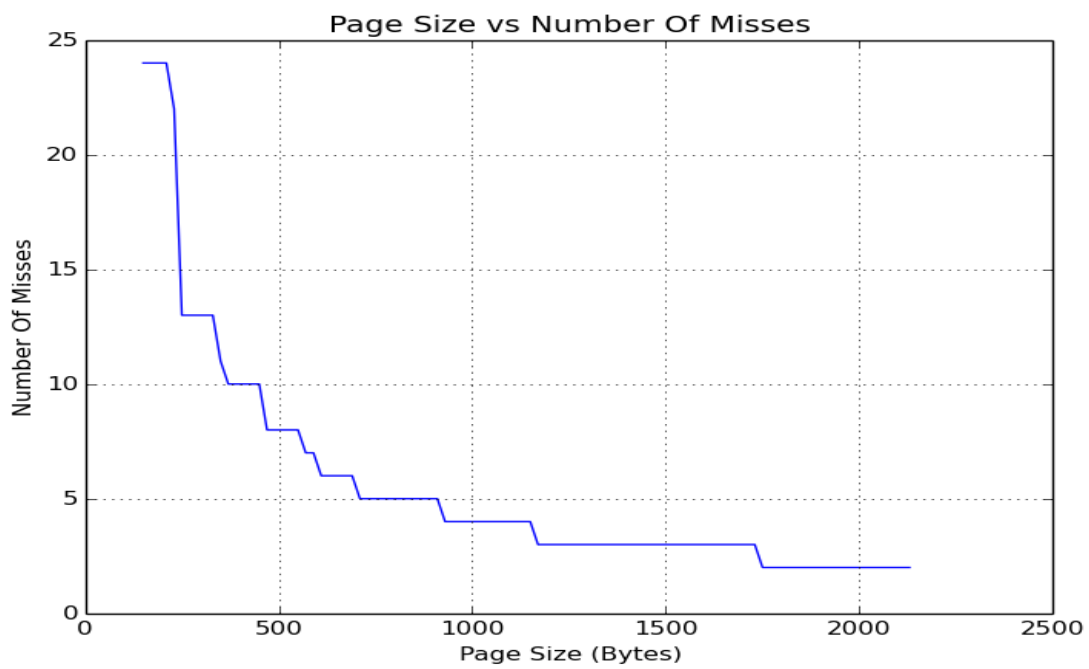
Above is an example how LRU algorithm works.

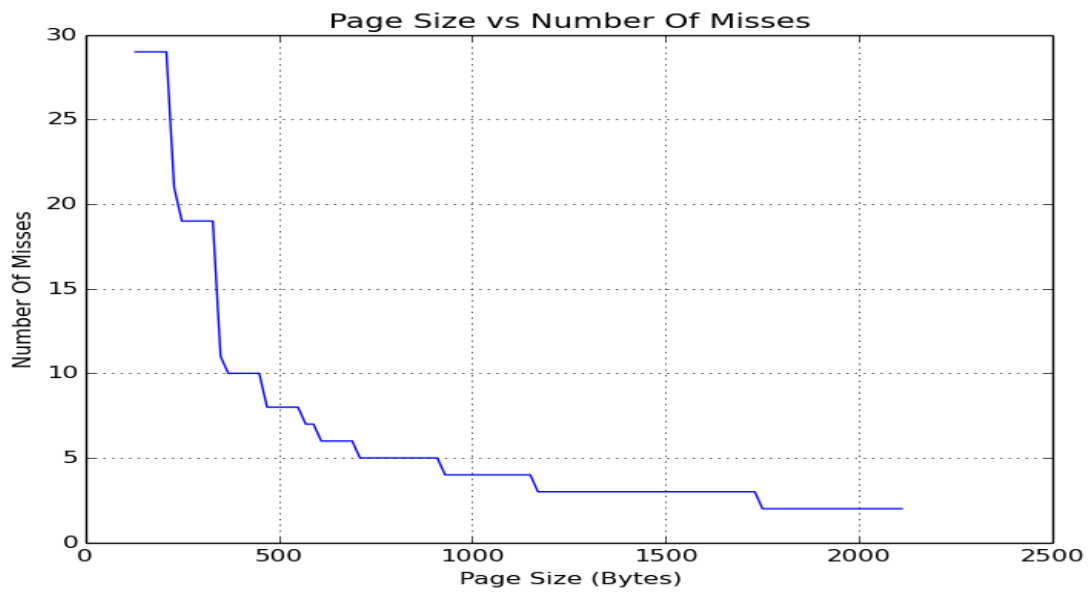
We have Generated few random input using a python script and made a csv file which have the details of the transactions. Experiments on each input file has been made varying the values of number of pages and pagesize.

All these can be found in folder **experiments**. Below are some of the results obtained.

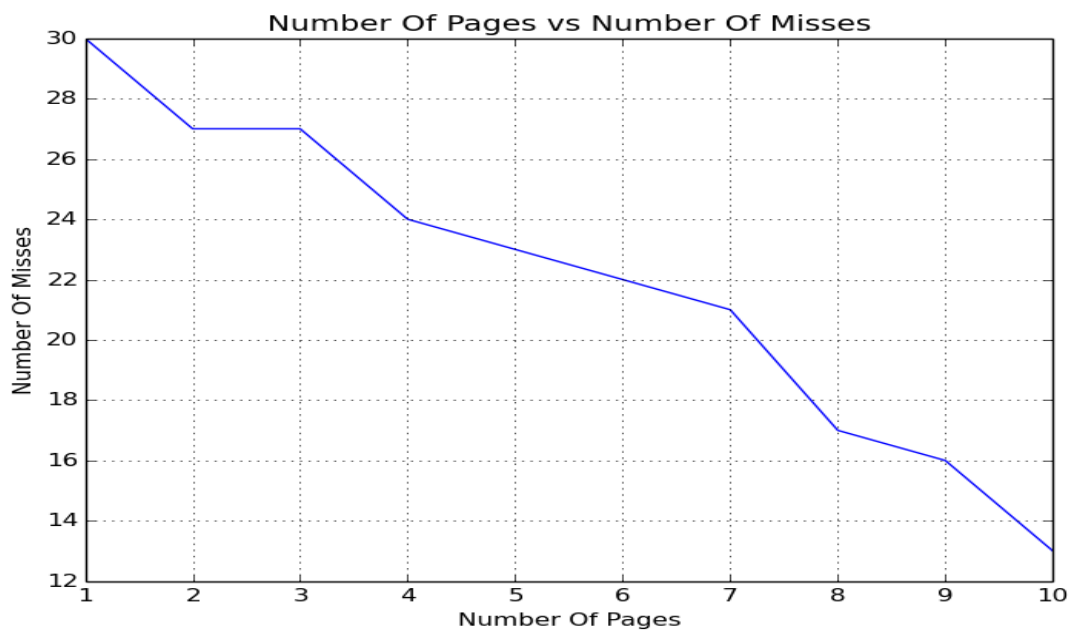
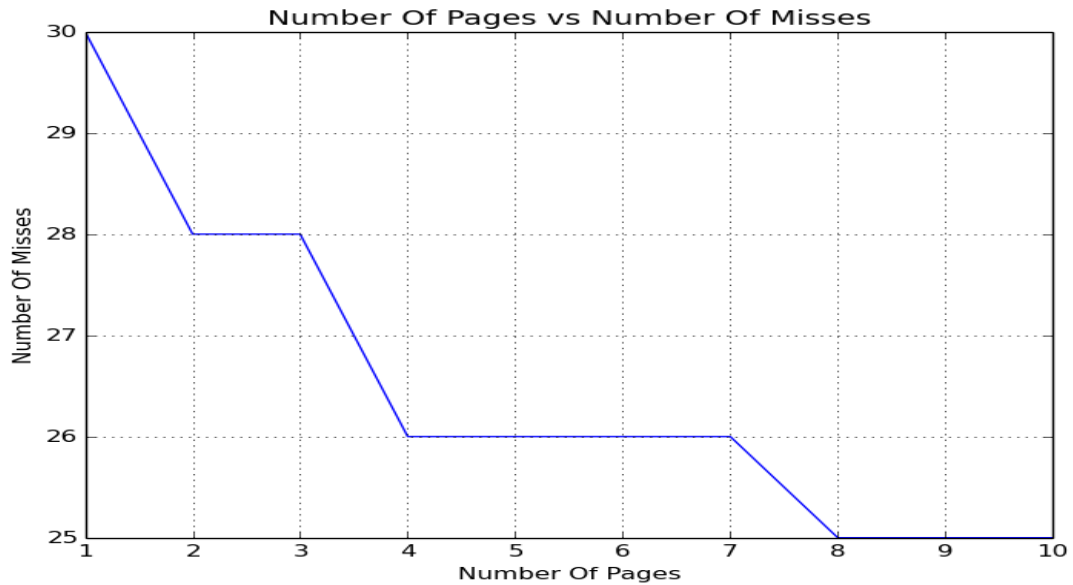
These are the graphs obtained by varying pagesize and keeping number of pages constant :

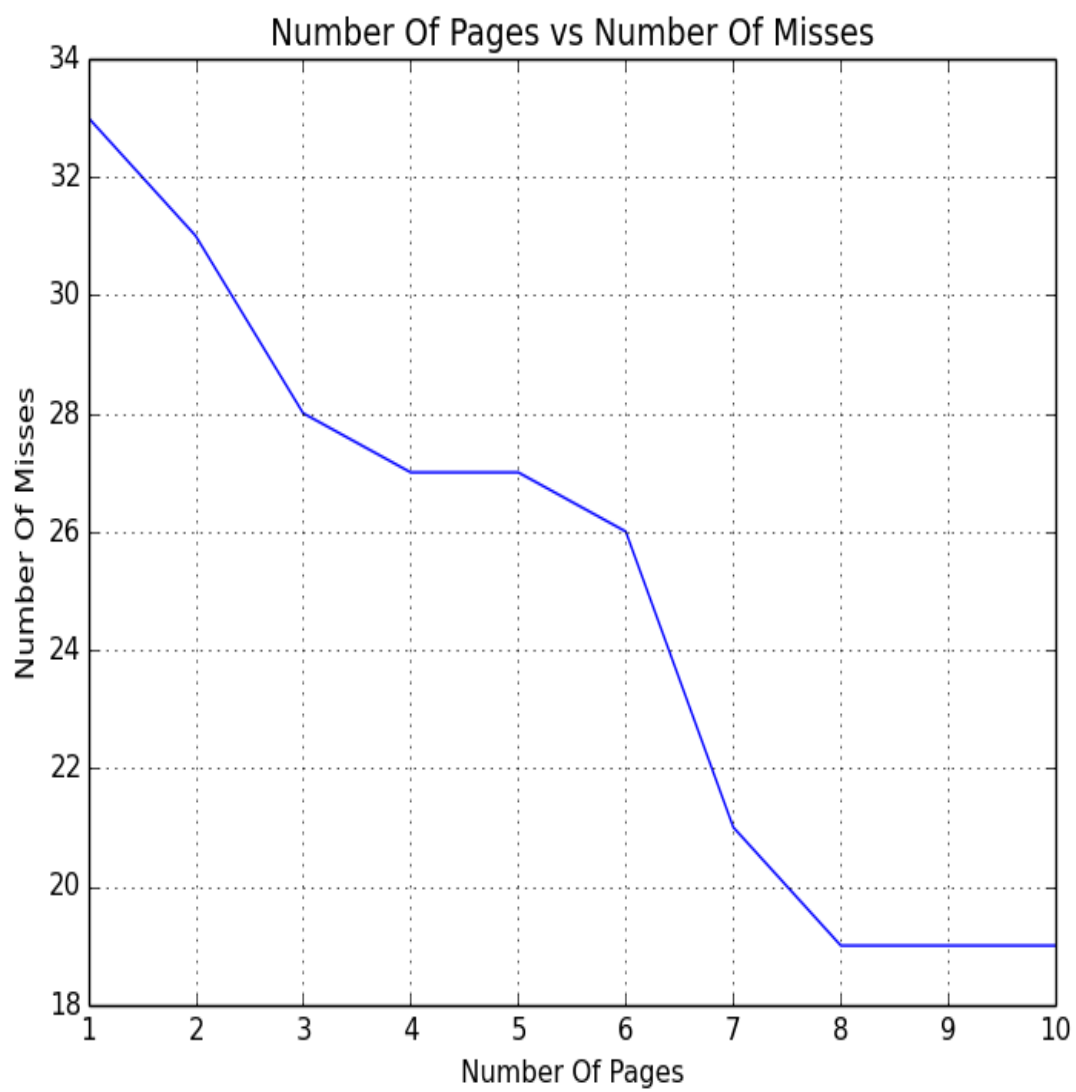


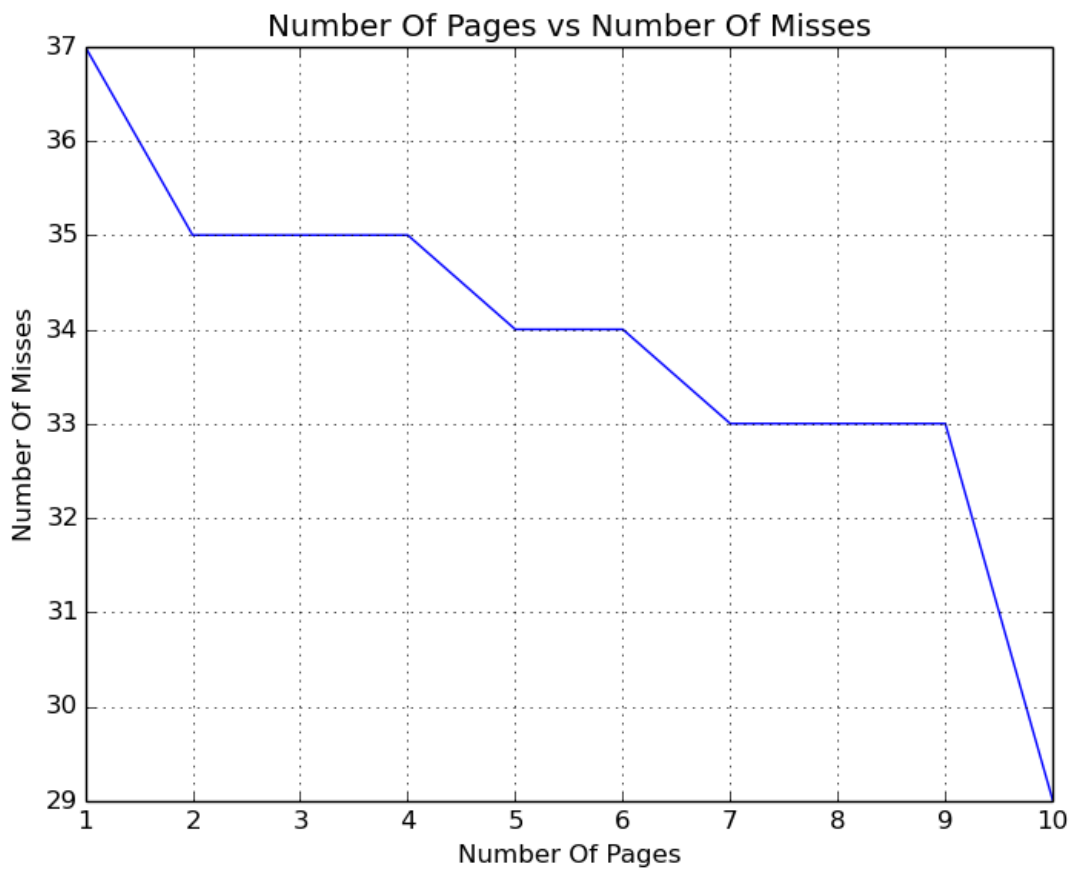
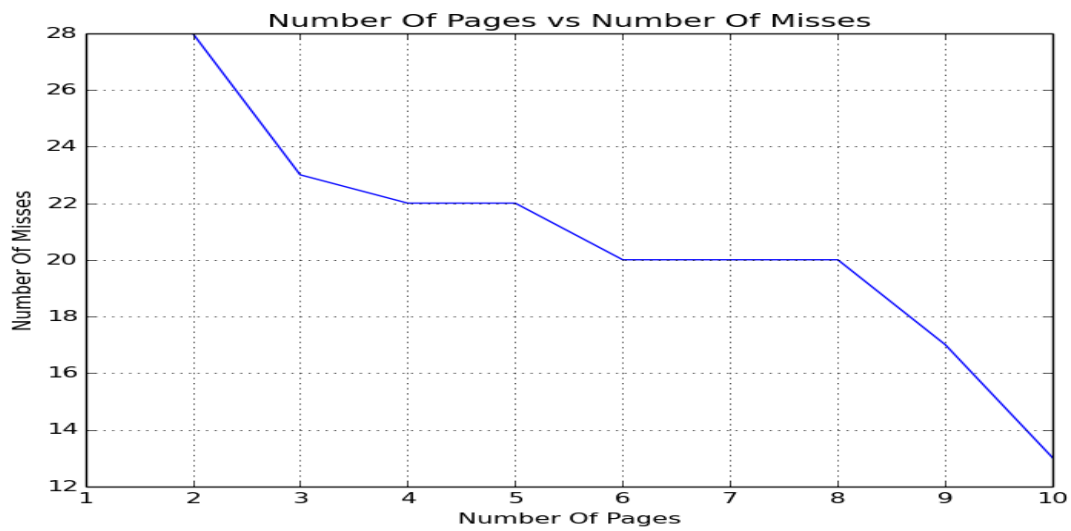




These are the graphs obtained by varying number of pages and keeping pagesize constant :







From the above results, we can notice that number of pages and paggesize are directly related to pagefaults.