Csci 4707 Lab03 Report

Replace Policy	Values10k		Values100k	
	Test1	Test2	Test1	Test2
LRU	00:00:00.095004	00:00:00.419586	00:00:00.328597	00:00:00.4191
	00:00:00.117655	00:00:00.391043	00:00:00.327634	00:00:00.418258
	00:00:00.101423	00:00:00.416573	00:00:00.32772	00:00:00.413364
	00:00:00.096011	00:00:00.416042	00:00:00.333156	00:00:00.410085
	00:00:00.106188	00:00:00.39443	00:00:00.325094	00:00:00.389481
Clock Sweep	00:00:00.100176	00:00:00.421902	00:00:00.32915	00:00:00.42399
	00:00:00.077895	00:00:00.399753	00:00:00.323529	00:00:00.419369
	00:00:00.101326	00:00:00.410637	00:00:00.334135	00:00:00.4394
	00:00:00.101262	00:00:00.413733	00:00:00.327347	00:00:00.424167
	00:00:00.100272	00:00:00.41204	00:00:00.329509	00:00:00.420668

Note: Because the default buffer pool is too large, the program didn't use the replace policy at all when I test with our data. So I reset the buffer pool to 80, using the command "/usr/local/pgsql/bin/postgres -B 80 –D /home/raoyin/project/4707/data". The result is the time for test case in 80 buffers. Running 5 times for each case.

Analysis:

From the above result, we can clearly find that LRU algorithm executed almost the same as the Clock Sweep algorithm. Actually the buffer two algorithms choose for each replacement is almost the same. The Clock Sweep is just using the usage count to represent the order of buffer in the queue of LRU. Especially when the buffer-pool size is only 80. The buffers with same usage count might be only one or two. This makes the difference even smaller. So the time of two algorithms is just the same. If the data size is larger, and the buffer-pool size is larger, we might find more difference between LRU and Clock Sweep.