

## C015585 : MAJOR ELECTRICAL ENGINEERING

KEYWORD : BUFFER CACHE/DISK CACHE/BUFFER MANAGEMENT/MEMORY HIERARCHY

CHAWALIT JAMEKORNKUL : A DISK ACCESS TIME IMPROVEMENT TECHNIQUE VIA  
BUFFER CACHE. THESIS ADVISOR : ASSO. PROF. SURIYAN TISHYADHIGAMA, Ph.D.  
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Application programs, that process data in disk, spend most of the time in accessing the data. Buffer cache or disk cache is a technique that uses main memories as buffers to improve disk access time. The objective of this thesis is to implement a buffer cache and to test that the disk access time is improved with the buffer cache. The implemented buffer cache is a "write-through" buffer cache and employs the least recently used replacement method. The buffer cache management program is of "stayed resident" type for IBM microcomputer running under the MS-DOS

The testing results show that the reading time is reduced from about 0.1 second for data in a floppy disk and about 0.01 second for the data in hard disk to less than 0.001 second for the data in the buffer.