Summary
DBMSs On A Mordern Processor: Where Does Time Go?

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1 To be completed before class

What are the problems solved by this paper? (50 words)
Inspite of many sophisticated techniques of out-of-order execution to increase overlap, database applications are still not having good performance. DBMS applications are usually more complex when compared to SPEC and LINKPACK like benchmarks. The same hardware which gives very good performance for benchmarks are giving only sub-optimal performance for database workloads. So there is a need for a detailed study of where the cycles are lost when executing a database applications.

What are the approaches attempted by this paper? (50 words)
A number of studies have characterized the database applications. But they usually study just one commercial DBMS. In this paper 4 different systems are studied to understand the general trend in all the database systems. Simple queries are written in order to exclude the effect of i/o. The programs were studied in Pentium 2 workstation using emon measurement tool.

What are the main conclusions of this paper? (50 words)
The main conclusions that are dervied from the results are: a. the second level cache is a main bottleneck. So there is a need to optimize l2 data cache placement. b. first level instruction cache is a problem. Also other subtle effects like branch mispredictions, etc are also important.Also it has been found that the peformance of the simple queries are very similar to the performance of the benchmarks like TPC.

2 To be completed after class

Did this paper address an important issue? Explain. (100 words)

Are the proposed approaches valid? Describe its strength and weakness. (100 words)

Do the results support the conclusions? Explain. (100 words)

Describe the potential future works? (100 words)