

Name:
State all assumptions necessary to answer the questions.

CS 487 Test 1
Sep. 23, 2004

Sketch and label the major parts of a database management system.

What is the challenge associated with creating a secondary index on a non-key field? Describe two solutions and the trade-offs associated with each.

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Draw an Entity-Relation diagram that describes a database of your choice. Demonstrate the usage of cardinality, attributes, weak-entities, and keys and include at least three entities and four relations.

Regarding B+ trees, suppose that the block pointer size is 8 bytes, the record pointer size is 5 bytes, the key size is 9 bytes, and the record size is 100 bytes. How big must disk blocks be to support a) internal nodes of order 20 and b) leaf nodes of order 10. (These may be different values. Show all work.)