

Home Work 2, CS344, Fall' 11, IITG [Due on September 14, before class]

Instructions:

1. Write precise and to-the-point answers. Please avoid writing long paragraphs or essays.
2. Avoid buzzwords (*information era, cyber world, edutainment....*) and trivial meaningless sentences (*This is obviously a big problem. A DBMS will automatically solve this problem.....*).
3. It will be great, if you can answer in terms of exact or estimated numbers with proper citations and standard computer science terminology.
4. Drawing explanatory diagrams, giving relevant examples, and providing analogies from other facets of computer science are some of the ways to make your answers more attractive and meaningful.
5. Expected time required to complete this home work is three hours.

Question 1 [15 points]: Read the article [The end of a DBMS era](http://cacm.acm.org/blogs/blog-cacm/32212-the-end-of-a-dbms-era-might-be-upon-us/fulltext) by Dr. Michael Stonebraker.

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Give at least one clear suggestion to improve relational model or relational DBMS systems to overcome problems mentioned in the article.

Question 2 [10 points]: Read section on multimedia databases from the textbook. To provide fast and effective search operation, suggest an indexing scheme for a large user-uploaded video collection such as Youtube.

Question 3 [5 points]: Read section on Tuple Relational Calculus from the textbook. Explain why Tuple Relational Calculus is *declarative* while Relational Algebra is *procedural*.