ASSIGNMENT : Introduction to Database Management Systems

Objective

The objective of this assignment is to make students familiar with the some important topics and application of Database systems.

Activities

- Students are expected to browse the various websites for the relevant material and look for the critical views on this domain. Students will further sketch these views in a summarized format in their own wording.

- Students will extend their study by referring to the books present in the library on Database Systems and will make their answers detailed and defect free.

- List of Reference books:

    o Fred Mc Fadden, Jeffry A Hoffer, and Merry Prescot "Modern Database Management", 8th Ed

    o Database Management Systems, 3rd Ed., by Ramakrishnan, Raghu & Gehrke, Johannes, McGraw-Hill.

    o Fundamentals of Database Systems, 5/E, Elmasri and Navathe, Addison-Wesley, ISBN: 0-201-74153-9.

Submission Format

1. All the questions are divided into three categories, **Review Questions, Problems & Exercises** and **Field Exercises.**

2. Assignment can only be submitted in well-structured printed format.

Review Questions

Question 1:

Why would you choose a database system instead of simply storing data in operating system files? When would it make sense not to use a database system?

Question 2:

What are the responsibilities of a DBA and the database designers? If we assume that the DBA is never interested in running his or her own queries, does the DBA still need to understand query optimization? Why?

Question 3

Discuss the capabilities that should be provided by a DBMS.

Question 4

What is the difference between controlled and uncontrolled redundancy? Illustrate with examples.

Question 5

How does 'Meta data' benefit the database designer?

Question 6

List five costs or risks associated with the database approach

Question 7

Describe two ways to convert data into information

Question 8

Discuss the database technology trends that will continue in the 2010s

Question 9

Perform a search on the internet of relational DBMS vendors. Pick two competing products and discuss whether
each is scalable and if it can be used for a personal, workgroup, departmental, Enterprise, or internet database.

Problems and Exercises

Question 10

Pakistan Railways has enabled online ticket booking facility. From what you have learned about databases in this chapter and your experience with booking the ticket over the web; list the advantages of this facility, to a user and an organization

Question 11

Road transport authority is maintaining database of licensed drivers and also the details of people who have applied for license. State whether each of the following represent data or metadata. If it represents data, state whether it is structured or unstructured data. If it represent metadata, state whether It is a fact describing a property of data or a fact describing context of data.

a. Driver's name, address and birth date.
b. The fact that the driver's name is 30 characters field
c. License number
d. Location from where the person has obtained the license.
e. Name of the agent who has applied for license and address
f. Name of the institute from where the individual is obtaining training in driving
g. A photo image of the driver
h. An image of the driver's fingerprint
i. The make and serial number of the scanning device that was used to scan the fingerprints
j. The resolution of the camera that was used to photograph the driver
k. The fact that the driver's birth date must precede today's date b at least 16 years.

Question 12

AVIVA life insurance would like to implement a relation database for both its in-house and as well as its outside agents. The outside agents will use its notebook computer to keep track of customer and policy information. What type of database would you recommend for this application?

Field Exercises

Question 13

Investigate whether organization follows more of the traditional file processing approach or the database approach to organization data. How many different databases does the organization have? Try to draw a figure to depict some or all of the files and databases in this organization.

Question 14

Talk with a database administrator or designer for the organization. What type of data these organizations maintain about its databases? Why did the organization choose to keep track of these and not other metadata? What tools are used to maintain these metadata?

Submission Date: Monday 09 March, 2015 Time: 11:59 am