Database Management System – cs422 DE

Assignment 1 – Week 1

This assignment is based on lecture 1 (chapter 1).

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(1) List two examples of database systems other than those listed in Section 1.1 of the book.

ANS:

a. Railway Reservation System: Railway reservation system is used to store the record of users, transaction records, transaction type, ticket types and reservation details.

b. Banking System: Database system is used to store the records of customer information, account type, employee information, transaction information, banking branch information, loan information etc.

(2) Explain what is meant by a database management system and contrast it with a File Management System.

ANS: The purpose of a database management system is to define, manipulate, retrieve, and manage data in a database. A DBMS manipulates the data itself, the data format, field names, record structure and file structure whereas the file management system organizes and maintains the files on storage devices.

Database Management System	**File Management System**
It is more complex as compared to the file system.	It is less complex as compared to the DBMS.
It has more security mechanism to secure data.	It provides less security in comparison to DBMS.
It costs high compared to the File Management System.	It is less expensive than DBMS.
Data consistency is more in DBMS because of normalization process.	Data consistency is less in the file system.
In DBMS there is no redundant data.	In file system, redundant data can be present.
Due to the centralized approach, data sharing is easy.	Data is distributed in many files, and it may be of different formats, so it isn't easy to share data.
It provides good protection mechanism.	It isn't easy to protect a file under the file system.
Integrity constraints are easy to apply.	Integrity Constraints are difficult to implement in file system.
Centralization is achieved in DBMS.	Centralization is hard to achieve in File Management System.

(3) Discuss advantages and disadvantages of DBMSs in short.
ANS:

Advantages	**Disadvantages**
Control of data redundancy	Complexity
Data consistency	Size
Can derive more information from the same amount of data	Cost of DBMSs
Sharing of data	Additional hardware costs
Improved data integrity	Cost of conversion
Improved security	Performance
Enforcement of standards	Greater impact of a failure
Increased concurrency	
Improved maintenance through data independence	
Improved back and recovery services	

(4) What are the 5 major components of the DBMS environment?

ANS:

a) Hardware: The DBMS and the application require hardware, including a PC and a hard drive, in order to run the DBMS on the OS and to store the data.
b) Software: This component includes the DBMS software and applications, together with the operating system and network software if the DBMS is used over a network.
c) Data: A DBMS collects, stores, processes, and retrieves data. It contains both actual data and metadata.
d) Procedures: This component mainly refers to the rules and instructions regarding the design and operation of the database.
e) People: The people who interact with the DBMS, such as end-users, database administrators, application developers, and programmers.

(5) A database management System (DBMS) is

A. Collection of interrelated data
B. Collection of programs to access data
C. Collection of data describing one particular enterprise
D. All of the above

ANS: B

(6) The DBMS provides uncontrolled access to the database.

A. True
B. False

ANS: False

(7) Disadvantages of File systems to store data is:

A. Data redundancy and inconsistency
B. Difficulty in accessing data
C. Data isolation
D. All of the above

ANS: D

(8) The Database Administrator (DBA) is responsible for the management of the data resource including database planning, development and maintenance of standards, policies and procedures, and conceptual/logical database design.

A. True
B. False

ANS: True

(9) Data Manipulation language enables users to

A. Retrieval of information stored in database
B. Insertion of new information into the database
C. Deletion of information from the database
D. All of the above

ANS: D

(10) Which of the following is Database language?

A. Data Definition Language
B. Data Manipulation Language
C. Query Language
D. All of the above

ANS: D