**Database Management System – cs422 DE**

**Assignment 1 – Week 1**

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**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**:
2. Railway Reservation System: Railway reservation system is used to store the record of users, transaction records, transaction type, ticket types and reservation details.
3. 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.

1. **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.

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| **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. |

1. **Discuss advantages and disadvantages of DBMSs in short.**

**ANS:**

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| **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 |  |

1. **What are the 5 major components of the DBMS environment?**

**ANS:**

1. 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.
2. 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.
3. Data:  A DBMS collects, stores, processes, and retrieves data. It contains both actual data and metadata.
4. Procedures: This component mainly refers to the rules and instructions regarding the design and operation of the database.
5. People: The people who interact with the DBMS, such as end-users, database administrators, application developers, and programmers.
6. **A database management System (DBMS) is**
7. Collection of interrelated data
8. Collection of programs to access data
9. Collection of data describing one particular enterprise
10. All of the above

**ANS: B**

1. **The DBMS provides uncontrolled access to the database.**
2. True
3. False

**ANS: False**

1. **Disadvantages of File systems to store data is:**
2. Data redundancy and inconsistency
3. Difficulty in accessing data
4. Data isolation
5. All of the above

ANS: D

1. **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.**
2. True
3. False

ANS: True

1. **Data Manipulation language enables users to**
2. Retrieval of information stored in database
3. Insertion of new information into the database
4. Deletion of information from the database
5. All of the above

ANS: D

1. **Which of the following is Database language?**
2. Data Definition Language
3. Data Manipulation Language
4. Query Language
5. All of the above

ANS: D