National University

Of Computer & Emerging Sciences Faisalabad-Chiniot Campus

Assignment # 1

CS 2005 – Database Systems
Spring 2022
Deadline: March 07, 2022

Submission Guidelines

1. Use your own words to answer the questions.
2. Plagiarism is not allowed.
3. You have to submit **hand written assignment in class**.
4. Mention your **name**, **roll Number** and **section** on first page of your assignment.
5. Late submission is strictly not allowed.

Answer the following questions.

1. Define the following models
   Network Model
   Hieratical Model
   Object Oriented Model
   Relational Data Model
   Object Relational Data Model
2. Explain the levels of three schema architecture and process of mapping between them (with diagram). Why mapping is needed between these levels?
3. Define the following terms:
   - Data
   - Database and its goal
   - DBMS
   - Database system
   - Database catalog
   - Program-data independence
   - DBA
   - End user
   - Meta-data
4. What is DLL and DML?
5. If you were designing a Web-based system to make airline reservations and sell airline tickets, which DBMS architecture would you choose (2 tier or 3 tier architecture)? Why? Why would the other architectures not be a good choice?
6. What are the responsibilities of the DBA and the Database designers?
7. What are the different types of database users? Discuss the main activities of each.
8. Discuss the capabilities that should be provided by a DBMS.
9. Discuss the differences between database systems, information retrieval systems and file system. Discuss which one is better.

10. Differentiate between the following. Explain which one is better.
    - Centralized and Client-Server architecture for DBMS
    - Two tier and three tier Client-Server architecture
11. Distinguish between logical and physical database design.
12. List six major steps that you would take in setting up a database for a particular enterprise.
13. Discuss the role of a high-level data model in the database design process.
14. 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?