**Assignment1** (Chapter 1 -3 Connolly & Begg) Each question is worth 10 points each

1. Discuss the differences between DDL and DML. What operations would you typically expect to be available in each language?

Answer:

* Data definition language (DDL) is used for defining and creating a database schema or modifying an existing one. DDL cannot be used to manipulate data.
* The operations expected to be available in DDL are CREATE, ALTER, DROP, TRUNCATE, RENAME, etc.
* Data manipulation language (DML) is used for supporting the basic data manipulation operations.
* The operations expected to be available in DML are INSERT, UPDATE, DELETE, SELECT, etc., so modification, insertion, retrieval, and deletion.

1. Describe the difference between data security and data integrity.

Answer:

* Data security uses controlled access mechanisms to prevent data corruption.
* Data security makes sure that the data can only be accessed by intended users.
* Data integrity defines the quality of data. It refers to the validity of data.
* Data integrity makes sure that the data stored in the database is not altered by unauthorized parties.

1. Describe the main characteristics of the database approach and contrast it with the file-based approach.

Answer:

1. Provide a definition for a data administrator and a database administrator. What types of interactions would these two users of the database have?
2. Name three record-based data models. Discuss the main differences between these data models.
3. What are the advantages of a relational database when compared to the file-based approach to storing data?
4. What is concurrency control and why does a DBMS need a concurrency control facility?
5. What is a transaction? Give an example of a transaction.
6. What is meant by the term ‘client-server architecture’ and what are the advantages of this approach? Compare the client-server architecture with two other architectures.
7. What is a Transaction Processing Monitor? What advantages does a TP Monitor bring to an OLTP environment?