Worksheet 6: SQL

Q1 and Q2 have one or more correct answer. Choose all the correct option to answer your question.

1. Which of the following are TCL commands?
A. Commit
B. Select
C. Rollback
D. Savepoint

Ans: A)Commit,C)Rollback,D)Savepoint

2. Which of the following are DDL commands?
A. Create
B. Select
C. Drop
D. Alter

Ans: A)Create, C)Drop, D)Alter

Q3 to Q10 have only one correct answer. Choose the correct option to answer your question.

3. Which of the following is a legal expression in SQL?
A. SELECT NULL FROM SALES;
B. SELECT NAME FROM SALES;
C. SELECT * FROM SALES WHEN PRICE = NULL;
D. SELECT # FROM SALES;

Ans: b)Select Name from Sales;

4. DCL provides commands to perform actions like-
A. Change the structure of Tables
B. Insert, Update or Delete Records and Values
C. Authorizing Access and other control over Database
D. None of the above

Ans: C)Authorizing Access and other control over Database

5. Which of the following should be enclosed in double quotes?
A. Dates
B. Column Alias
C. String
D. All of the mentioned

Ans:D)All of the mentioned

6. Which of the following command makes the updates performed by the transaction permanent in the database?
A. ROLLBACK
B. COMMIT
C. TRUNCATE
D. DELETE

Ans: B)Commit

7. A subquery in an SQL Select statement is enclosed in:
A. Parenthesis - (...).
B. brackets - [...].
C. CAPITAL LETTERS.
D. braces - {...}.

Ans:A)Parenthesis - (...)

8. The result of a SQL SELECT statement is a :-
A. FILE
B. REPORT
C. TABLE
D. FORM

Ans: C)Table

9. Which of the following do you need to consider when you make a table in a SQL?
A. Data types
B. Primary keys
C. Default values
D. All of the mentioned

Ans: D)all of the mentioned

10. If you don't specify ASC and DESC after a SQL ORDER BY clause, the following is used by___?
A. ASC
B. DESC
C. There is no default value
D. None of the mentioned

Ans: A)ASC

Q11 to Q15 are subjective answer type questions, Answer them briefly.

11. What is denormalization?

Ans: 1)Denormalization is a database optimization technique in which we add redundant data to one or more tables.
2)This can help us avoid costly joins in a relational database.
3)Note that denormalization does not mean 'reversing normalization' or 'not to normalize'. It is an optimization technique that is applied after normalization.
4)Basically, The process of taking a normalized schema and making it non-normalized is called denormalization, and designers use it to tune the performance of systems to support time-critical operations.

12. What is a database cursor?

Ans: 1)Cursor is a Temporary Memory or Temporary Work Station.

2)It is Allocated by Database Server at the Time of Performing DML(Data Manipulation Language) operations on Table by User.

3)Cursors are used to store Database Tables.

4)There are 2 types of Cursors: Implicit Cursors, and Explicit Cursors.

5)These are explained as following below.

1. Implicit Cursors:

Implicit Cursors are also known as Default Cursors of SQL SERVER. These Cursors are allocated by SQL SERVER when the user performs DML operations.

2. Explicit Cursors :

Explicit Cursors are Created by Users whenever the user requires them. Explicit Cursors are used for Fetching data from Table in Row-By-Row Manner.

13. What are the different types of the queries?

Ans: DDL (Data Definition Language):

DDL or Data Definition Language actually consists of the SQL commands that can be used to define the database schema. It simply deals with descriptions of the database schema and is used to create and modify the structure of database objects in the database. DDL is a set of SQL commands used to create, modify, and delete database structures but not data. These commands are normally not used by a general user, who should be accessing the database via an application.
List of DDL commands:

CREATE: This command is used to create the database or its objects (like table, index, function, views, store procedure, and triggers).

DROP: This command is used to delete objects from the database.

ALTER: This is used to alter the structure of the database.

TRUNCATE: This is used to remove all records from a table, including all spaces allocated for the records are removed.

COMMENT: This is used to add comments to the data dictionary.

RENAME: This is used to rename an object existing in the database.

DQL (Data Query Language):
DQL statements are used for performing queries on the data within schema objects. The purpose of the DQL Command is to get some schema relation based on the query passed to it. We can define DQL as follows it is a component of SQL statement that allows getting data from the database and imposing order upon it. It includes the SELECT statement. This command allows getting the data out of the database to perform operations with it. When a SELECT is fired against a table or tables the result is compiled into a further temporary table, which is displayed or perhaps received by the program i.e. a front-end.
List of DQL:

SELECT: It is used to retrieve data from the database.

DML(Data Manipulation Language):
The SQL commands that deals with the manipulation of data present in the database belong to DML or Data Manipulation Language and this includes most of the SQL statements. It is the component of the SQL statement that controls access to data and to the database. Basically, DCL statements are grouped with DML statements.

List of DML commands:

INSERT : It is used to insert data into a table.

UPDATE: It is used to update existing data within a table.

DELETE : It is used to delete records from a database table.

LOCK: Table control concurrency.

CALL: Call a PL/SQL or JAVA subprogram.

EXPLAIN PLAN: It describes the access path to data.

DCL (Data Control Language):
DCL includes commands such as GRANT and REVOKE which mainly deal with the rights, permissions, and other controls of the database system.

List of DCL commands:

GRANT: This command gives users access privileges to the database.

REVOKE: This command withdraws the user's access privileges given by using the GRANT command.

TCL (Transaction Control Language):
Transactions group a set of tasks into a single execution unit. Each transaction begins with a specific task and ends when all the tasks in the group successfully complete. If any of the tasks fail, the transaction fails. Therefore, a transaction has only two results: success or failure. You can explore more about transactions ***here***. Hence, the following TCL commands are used to control the execution of a transaction:

COMMIT: Commits a Transaction.

ROLLBACK: Rollbacks a transaction in case of any error occurs.

SAVEPOINT: Sets a save point within a transaction.

SET TRANSACTION: Specifies characteristics for the transaction.

14. Define constraint?

Ans: 1)SQL constraints are used to specify rules for the data in a table.

2)Constraints are used to limit the type of data that can go into a table.

3)This ensures the accuracy and reliability of the data in the table.

4)If there is any violation between the constraint and the data action, the action is aborted.

15. What is auto increment?

Ans: By default, it starts with the number one and increases the value by one for each new record. In the example below, you will use the CREATE TABLE command to create a Students table and apply PRIMARY KEY and AUTO_INCREMENT to the ID column.