SQL NOTES

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* What is a Database?

⇨ A database is an organized collection of data, stored and retrieved digitally from a remote or local computer system. Databases can be vast and complex and such databases are developed using fixed design and modeling approaches.

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* What are constraints in SQL?

⇨ Constraints are used to specify the rules concerning data in the table. The constraints are :-

NOT NULL :- Restricts NULL value from being inserted into a column.

CHECK :- Varifies values in a field satisfy a condition.

UNIQUE :- Ensures unique values to be inserted in the field.

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PRIMARY KEY :- Uniquely identifies each record in a table.

FOREIGN KEY :- Ensures referential integrity for a record in other table.

* What is a Primary Key?

⇒ The <u>PRIMARY KEY</u> constraint uniquely identifies each row in a table. It must contain unique values and has an implicit not null constraint. A table in SQL is strictly restricted to have one and only one primary key.

* What is the <u>select</u> statement?

⇒ <u>SELECT</u> operator in SQL is used to retrieve data from a database. The data returned is stored in a result table called the result - set.

<u>SYNTAX</u> : SELECT * FROM Table-name;

* What is SQL?

⇒ A <u>SQL</u> stands for structured Query Language. It is the standard language for relation database management systems. Handles organized data comprised of entities and relations.

* What are tables and field?

⇒ A <u>Tables</u> is an organized collection of data stored in the form of rows and columns. Columns can be categorized as <u>fields</u>. and the rows can be referred to as <u>records</u>.

* What is View?

⇒ A <u>VIEW</u> in SQL is a virtual table based on the result set of an SQL statement. A view contains rows and columns, just like a real table.

* What is the difference between DELETE, DROP and TRUNCATE?

⇨ <u>DELETE</u> :- DELETES rows based on a given condition.

<u>DROP</u> :- The entire table and rows and dropped along with the table schema.

<u>TRUNCATE</u> :- delete all rows from the table but not the table schema.

* What is Pattern matching in SQL?

⇨ SQL pattern matching provides for pattern search in data if you have no clue as to what word should it be. The <u>LIKE</u> operator is used in conjuction with SQL wildcards to fetch the required information.

<u>%</u> → represents zero, single or multiple characters.

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<u>—</u> → represents a single character.

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Example :- Name starting with ' a '
'a %.'

* What is the difference between Commit and Rollback when used in Transactions?

⇨ <u>COMMIT</u> :- Commit marks the end of a successful transaction. After Commit, the change made by that query will be parmanent and visible.

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ROLLBACK :- Used to erase all modifications made from the start of a transaction or to a savepoint.

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* <u>What are some common clauses used with the SELECT query?</u>

⇒ <u>WHERE</u> :- Used to filter records based on specific conditions.

<u>ORDER BY</u> :- Used to sort the records based on some fields in ascending or descending order.

<u>GROUP BY</u> :- Used to group records with identical data.

<u>HAVING</u> :- Used to filter records in combination with GROUP BY clause.

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* <u>What are aggregate functions ?</u>

⇒

An aggregate function performs operations on a collection of values to return a single scalar value.
Used with the GROUP·BY and HAVING clause of the SELECT statement.

Continue ⟶

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AVG ( ) :- Calculates mean of values.

COUNT ( ) :- total number of records in a table or view.

MIN ( ) :- minimum value.

MAX ( ) :- maximum value.

SUM ( ) :- calculates sum of a collection of values.