**SQL**

**Section 1**

**SQL STATEMENTS**

**3.What is PostgreSQL**

* PostgreSQL is a powerful, open source object-relational database system that uses and extends the SQL language combined with many features that safely store and scale the most complicated data workloads.
* PostgreSQL has earned a strong reputation for its proven **architecture, reliability, data integrity, robust feature set, extensibility,** and the dedication of the open source community behind the software to consistently deliver performant and innovative solutions.

**4.Database Design**

* Database design is **the organization of data according to a database model**. The designer determines what data must be stored and how the data elements interrelate. With this information, they can begin to fit the data to the database model.

**Graphical user interface, text, application

Description automatically generated**

**5. Createing table**

The **CREATE TABLE** statement is used to create a new table in a database

**Syntax**

CREATE TABLE *table\_name*(  
*column1 datatype*,  
*column2 datatype*,  
*column3 datatype*,  
   ....  
);

Example :

CREATE TABLE Persons (  
    PersonID int,  
    LastName varchar(255),  
    FirstName varchar(255),  
    Address varchar(255),  
    City varchar(255)  
);

**6.Analyzing Create Table**

Analyzing Creating table is performs a key distribution analysis and stores the distribution for the named table or tables.

**7.Insert data to the table**

The INSERT INTO statement is used to insert new records in a table.

Syntex:

INSERT INTO table\_name(column1*,* column2*,* column3*,* ...)  
VALUES (value1*,* value2*,* value3*,* ...);

Exaple:

INSERT INTO Customers (CustomerName, ContactName, Address, City, PostalCode, Country)  
VALUES ('Cardinal', 'Tom B. Erichsen', 'Skagen 21', 'Stavanger', '4006', 'Norway');

**8.Retrieve data with select statement**

An SQL SELECT statement retrieves records from a database table according to clauses (for example, FROM and WHERE) that specify criteria.

Example:

SELECT column1, column2 FROM table1, table2 WHERE column2='value';

**9. What is calculated column in SQL Server?**

A computed column is **a virtual column that is not physically stored in the table, unless the column is marked PERSISTED**. A computed column expression can use data from other columns to calculate a value for the column to which it belongs.

Example:

Select

ColumnA,

ColumnB,

calccolumn1,

calccolumn1 / ColumnC as calccolumn2

From (

Select

ColumnA,

ColumnB,

ColumnC,

ColumnA + ColumnB As calccolumn1

from t42

);

**12.String operation**

**String** operation are used to perform an operation on input string and return an output string.  
Following are the string functions defined in SQL

**functions**

SQL aggregate functions return a single value, calculated from values in a column.

Useful aggregate functions:

* AVG() - Returns the average value
* COUNT() - Returns the number of rows
* FIRST() - Returns the first value
* LAST() - Returns the last value
* MAX() - Returns the largest value
* MIN() - Returns the smallest value
* SUM() - Returns the sum