# Contents

# Introduction

Components of SQL statements

| Select | Data Retrieval |
|---|---|
| Insert<br>Update<br>Delete<br>Merge | DML |
| Create<br>Alter<br>Drop<br>Rename<br>Truncate | DDL |
| Commit<br>Rollback<br>Save Point | Transaction Control |
| Grant<br>Revoke | DCL |

**Select Statement**: Select statement is used to retrieve the information from database using select statement you can do the following

- Projection
- Selection
- Joining

**Projection**: It is used to choose columns in a table that you want returned by the query.

**Selection**: It is used to choose rows in a table that you want returned by your query.

**Joining**: You can choose the join capability in SQL to bring together data that is stored in different tables by creating a link between them.

**Note**: Selection and projection often considered as horizantal and vertical partinioning.

**Syntax**: Select *| { [distinct] column| Expression [alias],….} From table

- Select identifies what columns
- From identifies which table
- Always write keywords in uppercase

**Selecting all columns**:

Select * from employees;

We can also display all columns of alll rows by lisitng column names after the seelct keyword

**Ex**: Select department_id, department_name, manager_id, location_id from deparrtments;

**Selecting specific columns of all rows**:

**Ex**: Select department_id, location_id from departments;

In this case we can specify the column names in the order in which you want them to appear on the output.

**Note**: We can also select from psuedo columns a psuedo column behaves like a table column but it is not actually stored in the table you cannot insert or delete values in the psuedo column.Some available psuedo columns are CURRVAL,NEXTVAL, LEVEL, ROWID, ROWNUM.

**Arithematic Expressions**: Create expressions with number and date data by using arithematic operators

| Operation | Description |
|---|---|
| + | Add |
| - | Substraction |
| * | Multiply |
| / | Divide |

**Ex**: Select last_name, salary, salary+300 from employees;

**Operator Precedence**: *, / , +,-

If the operators within a expression are of same priority then evaluation is done from left to right.

**Ex**: Select last_name, salary, 12*salary+100 from employees;

**Note**: use parentheses to reinforce the standard order of precedence and to improve clarity.

**Ex**: (12*salary)+100 with no change in above result

**Note**: parentheses are used to override the rules of precedence also

**Ex**: Select last_name, salary, 12*(salary+100) from employees;

**Defining a null value**:

A null value is a value that is unavailable, unassigned, unknown or in applicable..
Null is not same as zero or blank space.

**Ex**: Select last_name,job_id,salary,commission_pct from employees;

Arithematic expressions containing a null value evaluate to null

**Ex**: Select last_name, 12*salary*commission_pct from employees;

## Defining column aliases:

A column alias
- Renames column heading
- It is useful for calculations
- Immediately followed by the column name,there can also be optional keyword AS keyword betweeen the column name and alias.
- Enclose alias name in double quotations if it contains a special characters such as # or $ or is case sensitive.
- Column aliases can be used in both select clause and the order by clause you cannot use column aliases int eh where clause.

**Ex**: Select last_name AS name, commossion_pct AS comm from employees;

**Ex**: Select last_name "name", salary*12 "Annual Salary" from employees;

## Using concatenation operator:

- concatenates character string or columns to other columns
- It is represented by two vertical bars ||
- Creates resultant column that is a character expression.

**Ex**: Select last_name || job_id AS "Employees" from employees;

## Literal characters strings:

A literal is a character, a number or a date included in the select list.

Date and character literal values must be enclosed within single quotation marks.

Each character string is output once for each row returned