SQL

1. Primary Key in SQL

- Primary Key is used to uniquely identify each row in a table
- It must contain a uniques value and cannot contain NULL values
- A table can have only one primary key
- Primary key can be composed of one or more columns

```
create table person (
    ID not null primary key,
    FName varchar(255),
    LName varchar(255),
    Age int
);
```

2. Foreign Key

- Foreign key is used to link two tables together
- A foreign key is a field in one table that reffers to primary key in another table
- Table containing foreign key is called Child Table.

```
Create table order(
    OrderID int NOT NULL,
    PersonID int,
    OrderNumber int NOT NULL,
    primary key(OrderID),
    foreign key(PersonID) references person(ID)

);
```

3. SQL Queries:

1. DISTINCT: Used to return only distinct (different) values

```
select distinct Country from Customers;
```

2. WHERE: Filter records based on some condition

```
select Country,PostalCOde from Customers where PostalCode='USA';
```

3. ORDER BY: Used tosort the result-set in ascending or descending order.

```
select Country,PostalCode from Customers ORDER BY PostalCode;
```

4. COUNT(): Returns the number of rows that matches a specified criteria.

```
select COUNT(Country) as NoOfCounrty from Customers;;
```

5. HAVING: clause was added to SQL because the WHERE keyword could not be used with aggregate functions.

```
SELECT COUNT(CustomerID), Country
FROM Customers
GROUP BY Country
HAVING COUNT(CustomerID) > 5;
```

6. DROP: Drop in used to completely delete a DB, Table or a Column from the table

```
DROP TABLE table_name;
DROP DATABASE databasename;
ALTER TABLE table_name DROP COLUMN column_name;
```

7. Auto-Increment:

- It is a keyword that is used to automatically increase the value of column by 1 when a new record is inserted into a table.
- AUTO_INCREMENT keyword is used in MYSQL

- By Default it starts with 1.

8. Between:

- It is an Operator
- The BETWEEN operator selects values within a given range.
- The Between Operator is Inclusive: begin and end values are included

```
SELECT * FROM Products
WHERE Price BETWEEN 10 AND 20
```

4. Types of Join in SQL

- (INNER) JOIN: Returns records that have matching values in both tables
- LEFT (OUTER) JOIN: Returns all records from the left table, and the matched records from the right table
- RIGHT (OUTER) JOIN: Returns all records from the right table, and the matched records from the left table
- FULL (OUTER) JOIN: Returns all records when there is a match in either left or right table

5. Types Of WildCard

- A wildcard character is used to substitute one or more characters in a string.

Symbol	Description
%	Represents zero or more characters
_	Represents a single character
[ ]	Represents any single character within the brackets
^	Represents any character not in the brackets
-	Represents a range of characters

```
WHERE CustomerName LIKE 'a%'
```

6. Types of SQl Commands

- DDL(Data Definition Language).
  - `CREATE , ALTER , DROP , TRUNCATE`
  - `Create table persons(ID int,fname varchar);`
- DML(Data Manipulation Language).
  - `INSERT , DELETE  UPDATE ,`
- DQL(Data Query Language).
  - `SELECT`

- DCL(Data Control Language).
  - `GRANT` , `REVOKE`
  - `GRANT CRETE TABLE to user1` ;
- TCL(Transaction Control Language).
  - `COMMIT` , `ROLLBACK` , `SAVEPOINT`
  - `ROLLBACK`

AGGREGRATE FUNCTIONS in SQl

- AVG(): Finds the average
  - `SELECT AVG(Price) FROM Products;`
- COUNT(): Gives the count of ROWS
  - `SELECT COUNT(*) from Products`
- SUM(): Finds Sum
  - `SELECT SUM(Price) FROM Products;`
- MIN(): Finds Minimum
  - `SELECT MIN(Price) FROM Products;`
- MAX(): Finds Maximum
  - `SELECT MAX(Price) FROM Products;`