--Constraints

--Constraints are used to maintain the accuracy and integrity of the data.

--1.Primary Key

--2.Foreign Key

--3.NOT NULL key

--4.Unique Key

--5.Check Key

--6.Default key

--1.Primary Key --PK

--NOT NULL + UNIQUE

--It will always identifies unique record into column of the table.

--PK is used in general with numeric values .

Create table student(S_ID int primary key,

STUDENT_NAME varchar(20),

LOC varchar(20))

insert into student values (1,'praveen','pune')

insert into student values (2,'Rohan','mumbai')

insert into student values (3,'Rohan','mumbai')

insert into student values (NULL,'veen','pune')

select * from student

--Auto Increment

--It will automatically insert or increment the unique values into table once you define the auto increment.

--It will allow you to specify the range of values by which you want to create a unique values.

--Syntax : Column_name IDENTITY(start,diff)

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create table BankAccount1(Account int primary key identity(11128870,1),

AccName varchar(20),

Branch varchar(20),

City varchar(20))

insert into BankAccount values ('Shon','KR PURAM','Banglore')

insert into BankAccount values ('Rohan','SP Road','Pune')

insert into BankAccount values ('Amit','Katraj','Pune')

insert into BankAccount values ('Mansi','Miyapur','HYD')

insert into BankAccount values ('Sagar','Shivaji Nagar','Sangli')

select * from BankAccount

--2.Foreign Key(FK)

--A FK is column or collection o columns in one table that referes to the primary key in another table.

--NULL value can be allowed in foreign key column.

```sql
create table department(DID int primary key identity, Dept varchar(20))
```

```sql
insert into department values('CIVIL')

insert into department values('Mech')

insert into department values('IT')

insert into department values('ECE')
```

```sql
select * from department
```

```sql
create table student (S_ID int primary key identity,S_NAME varchar(20),

DID int foreign key references department(DID) )
```

```sql
insert into student values ('Praveen',2)

insert into student values ('amit',2)

insert into student values ('Ronit',1)

insert into student values ('Meena',4)

insert into student values ('shanmuka',3)

insert into student values ('monika',Null)

insert into student values ('monika',7)
```

```sql
select * from student
```

--3.NOT NULL

--NOT NULL constraint restrict you to insert NULL values into a column.

--If you define NOT NULL constraint on column then you cant insert the NULL values in it.

--It will allow duplicates.

create table NOTNULL (NID int , FirstName varchar(20) NOT NULL, AGE int NOT NULL)

insert into NOTNULL values (1,'Amrita',27)

insert into NOTNULL values (2,'Amrita',27)

insert into NOTNULL values (3,NULL,27)

select * from NOTNULL

--4.Unique

--It ensures that all the values in a column should be unique or diffrent value.

--It will accept one NULL value into the column.

create table UNIQUE_TEST (U_ID int Unique , FirstName varchar(20) NOT NULL unique, AGE int NOT NULL)

insert into UNIQUE_TEST values (1,'Amrita',27)

insert into UNIQUE_TEST values (2,'Sangita',27)

insert into UNIQUE_TEST values (NULL,'Arpita',23)

insert into UNIQUE_TEST values (NULL,'mehir',23)

select * from UNIQUE_TEST

--5.Check key

--It ensures that all values in a column satisfies a specific condition.

--Check constraints is used to restrict the value of a column.

--It is just like condition checking before inserting the data into column.

Create table CHECK_KEY(

C_ID int primary key ,

C_Name varchar(10) NOT NULL UNIQUE,

C_AGE int check(C_AGE >18))

insert into CHECK_KEY values(1,'Sumit',19)

--The below statment through an exception while inserting the data

insert into CHECK_KEY values(2,'Ronit',17)

--Exception/Error

--The INSERT statement conflicted with the CHECK constraint "CK__CHECK_KEY__C_AGE__440B1D61".

--The conflict occurred in database "Testing18", table "dbo.CHECK_KEY", column 'C_AGE'.

--6.Default constraint

--Set a default value to column when value is not defined/inserted/specified.

Create table DEFAULT_VALUE(

D_ID int primary key,

D_name varchar(10) NOT NULL Unique,

D_City varchar(10),

D_AGE int check(D_age >=20),

D_LOC varchar(20) default 'Balaji Nagar')

select * from DEFAULT_VALUE

--METHOD-I

insert into DEFAULT_VALUE values(1,'Smita','Jaipur',20,'katraj')

insert into DEFAULT_VALUE values(2,'Amla','Chennai',28,default)

insert into DEFAULT_VALUE values(3,'Asin','Madurai',34,'')