Day: 8

Date: 16-08-2024

RDBMS and SQL

Database:

Database is a collection of information that is organized so that it can easily be accessed, managed and updated.

What is SQL Server

SQL Server is a relational database management system (RDBMS) developed and marketed by Microsoft.

Similar to other RDBMS software, SQL Server is built on top of SQL, a standard programming language for interacting with relational databases.

CRUD Operations:

CRUD is an acronym for CREATE, READ(SELECT), UPDATE, and DELETE statements in SQL Server. CRUD in database terms can be mentioned as Data Manipulation Language (DML) Statements as well. Data Manipulation Language is used to manage or manipulate the data present inside database Tables.

1.Create: CREATE often refers to the INSERT statement which is used to insert new data to any of the SQL Server tables.

Syntax: INSERT INTO TABLE_NAME (COLUMNS_NAMES_LIST)

        VALUES (COLUMNS_VALUES_LIST);

Example: INSERT INTO PRODUCT(PRODUCT_ID, PRODUCT_NAME)

         VALUES (1,RUBBER);

2. Read: READ often refers to SELECT statement or Data Retrieval operation from Tables or Views.

Syntax:

SELECT * FROM object_name;

Example: Select * From product

3.Update: UPDATE operation refers to changing any data existing in the Table and the UPDATE operation or statement in SQL Server includes the SET clause to specify which columns to be updated and use the WHERE clause to UPDATE specific records.

Syntax: UPDATE Table_Name SET ColumnName = Value WHERE CONDITION;

Example: Update product set product_name = Book where product_id = 1;

4. Delete: DELETE operation is used to delete or remove any existing records from the table.

Syntax:

Syntax to delete all the records:

1. DELETE FROM TableName;

Syntax to delete records according to the condition:

2. DELETE FROM TableName WHERE CONDITION;

Example: 1.Delete from product;

           2.Delete from product where product_id=1;

SELECT:

To retrieve data from a table, you use the SELECT statement.

	product_id	product_name	supplied	unit	price
1	1	laddu	2	12	NULL
2	2	badham	1	10	150
3	3	almonds	1	15	200
4	4	oil	3	20	150
5	5	shampoo	4	35	80

```
select product_id from products;
```

Output:

	product_id
1	1
2	2
3	3
4	4
5	5

If we want to print all the details use * symbol.

Example: Select * from produts;

Output:

	product_id	product_name	supplied	unit	price
1	1	laddu	2	12	NULL
2	2	badham	1	10	150
3	3	almonds	1	15	200
4	4	oil	3	20	150
5	5	shampoo	4	35	80

Assignment-1:

Assignment 1: Write a SELECT query to retrieve all columns from a 'customers' table, and modify it to return only the customer name and email address for customers in a specific city.

SQLQuery29.sql - DE...dministrator (104))* + X SQLQuery28.sql - D...Administrator (54)) Customer.sql - DESK...dministrator (119))

`select customer_name,customer_email from customers where address like '%andhra pradesh';`

100 %

Results   Messages

	customer_name	customer_email
1	abhiram	abhi@gmail.com
2	abhi	abhi@gmail.com
3	bhanu	bhanu@gmail.com
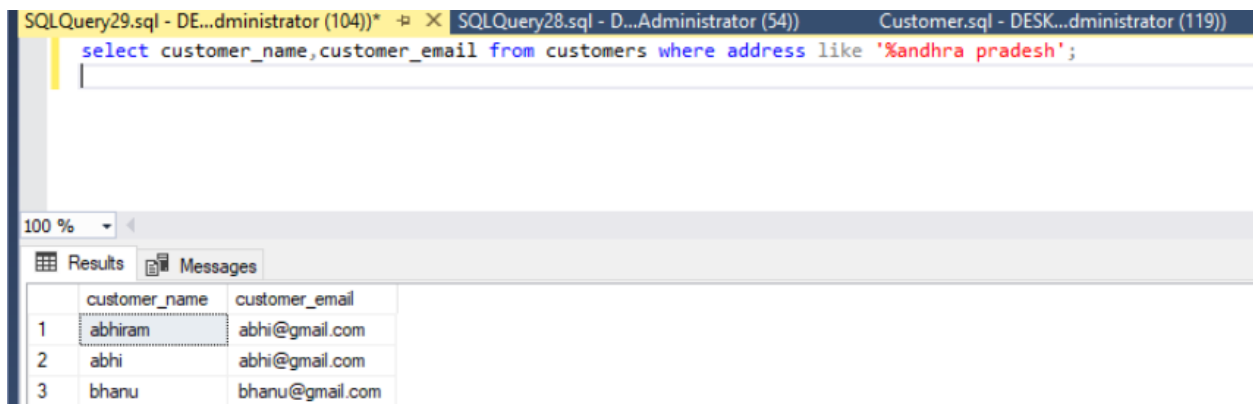
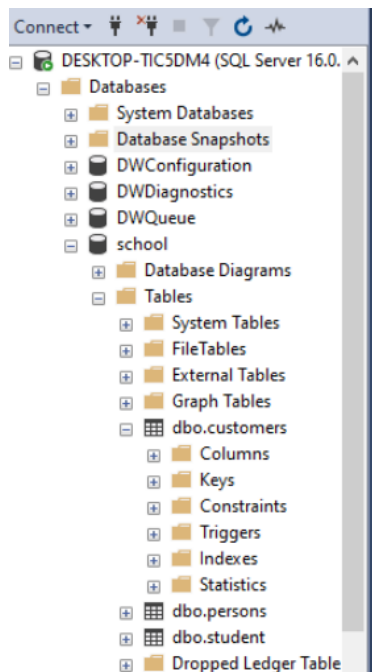Select customer_name, customer_email

From customers

Where address like '%Andhra pradesh';

Assignment-2:

Create a table named as Customer with customer_id, customer_name, customer_email and address. Insert these constraints and values to it and perform CRUD operations(create, read, update and delete).

Fig-1: Customer table created


```sql
create table customers(
customer_id int,
customer_name varchar(50),
customer_email varchar(100),
address varchar(100));

insert into customers(customer_id, customer_name, customer_email, address)
values(10,'abhi','abhi@gmail.com','andhra pradesh'),
(20,'bhanu','bhanu@gmail.com','andhra pradesh'),
(30,'chinni','chinni@gmail.com','chandigarh'),
(40,'dhanu','dhanu@gmail.com','delhi'),
(50,'alex','alex@gmail.com','kerala'),
(60,'latha','latha@gmail.com','karnataka'),
(70,'sruthi','sruthi@gmail.com','tamilnadu');

update customers set customer_name = 'abhiram' where customer_name ='abhi';

select * from customers;
select distinct customer_name from customers;
select customer_name from customers;
select count (distinct(customer_id)) from customers;
select customer_email from customers where customer_name = 'abhiram';
select * from customers where address like '%andhra pradesh';
select count (distinct(address)) from customers;
select distinct address from customers;
drop table customers;
truncate table customers;
```

Create:

Assignment-3:

Create a employees table and add empid, name and age and insert values to it and pint the details.

Condition1 age should not take more than 18yrs
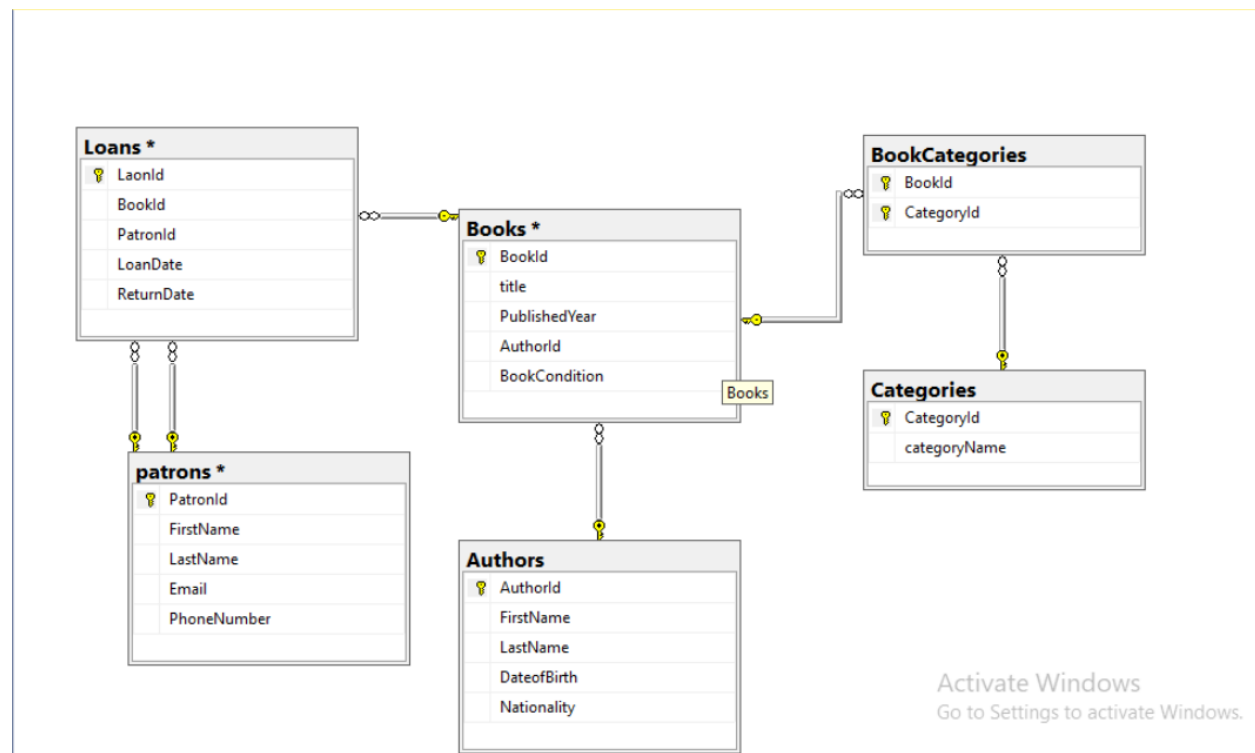
Condition2 empid make it as primary key(unique).

```
SQLQuery32.sql - DE...dministrator (113))          SQLQuery31.sql - DE...dministrato
create table employees
(empid int,
name varchar(255),
age int ,
constraint age_check check(age>18),
primary key(empid)
);


insert employees (empid,name,age) values(1,'anna',35);
insert employees (empid,name, age) values(2,'mahi',25);
insert employees (empid,name,age) values(3,'rani',19);
select * from employees;
select age from employees;
select age from employees where age>30;
```
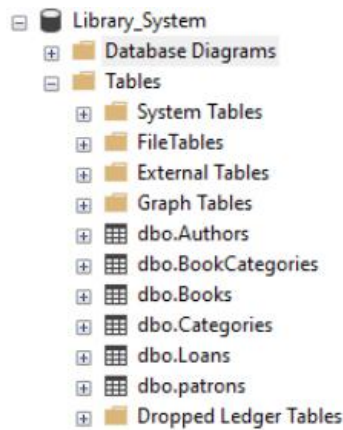
Assignment 4:

Analyze a given business scenario and create an ER diagram that includes entities, relationships, attributes, and cardinality. Ensure that the diagram reflects proper normalization up to the third normal form.

Library_System
Database Diagrams
Tables
System Tables
FileTables
External Tables
Graph Tables
dbo.Authors
dbo.BookCategories
dbo.Books
dbo.Categories
dbo.Loans
dbo.patrons
Dropped Ledger Tables

Assignment-5:

Without SQL query create a table named as products and create colums as product_id, product_name, supplied, unit and price and assign values to it.

1.print all the details in the table

2.print only price column

3.print sum of all the units in the unit column

4.print least price In the price column.
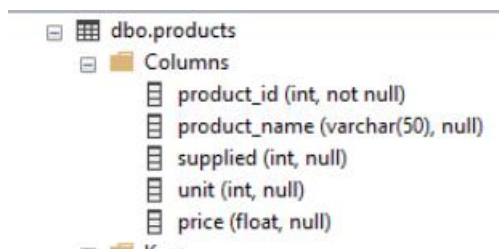
5. print Number of products having prices.

dbo.products
Columns
product_id (int, not null)
product_name (varchar(50), null)
supplied (int, null)
unit (int, null)
price (float, null)

Fig-1: Products table created with columns

product_id	product_name	supplied	unit	price
1	laddu	2	12	350
2	badham	1	10	150
3	almonds	1	15	200
4	oil	3	20	150
5	shampoo	4	35	80

Fig-2: Assign values to columns without using SQL query

1.print all the details in the table

```
select * from products;---print all the details from the products table
.
```

Output:

	product_id	product_name	supplied	unit	price
1	1	laddu	2	12	NULL
2	2	badham	1	10	150
3	3	almonds	1	15	200
4	4	oil	3	20	150
5	5	shampoo	4	35	80

2.print only price column

```
select price from products;--print only product_id column
```

Output:

	price
1	NULL
2	150
3	200
4	150
5	80

3.print sum of all the units in the unit column

```
select sum(unit) as [total number of units] from products;--prints sum of all the units and
                                                           --change column name as total number of units as reference
```

Output:

	total number of units
1	92

4.print least price In the price column.

```
select min(price) from products;--prints least price in price column
```

Output:

	(No column name)
1	80

5. print Number of products having prices.

```sql
select count(price) as count_of_prices from products;--prints number of products having prices
```

Output:

	count_of_prices
1	4