**SQL BASICS**

Structured Query Language(SQL) is the database language by the use of which we can perform certain operations on the existing database and also we can use this language to create a database. SQL uses certain commands like Create, Drop, Insert, etc. to carry out the required tasks.

These SQL commands are mainly categorized into three categories as:

1. DDL – Data Definition Language
2. DML – Data Manipulation Language
3. DCL – Data Control Language

**DDL**

DDL or Data Definition Language actually consists of the SQL commands that can be used to define the database schema. It simply deals with descriptions of the database schema and is used to create and modify the structure of database objects in the database. DDL is a set of SQL commands used to create, modify, and delete database structures but not data.

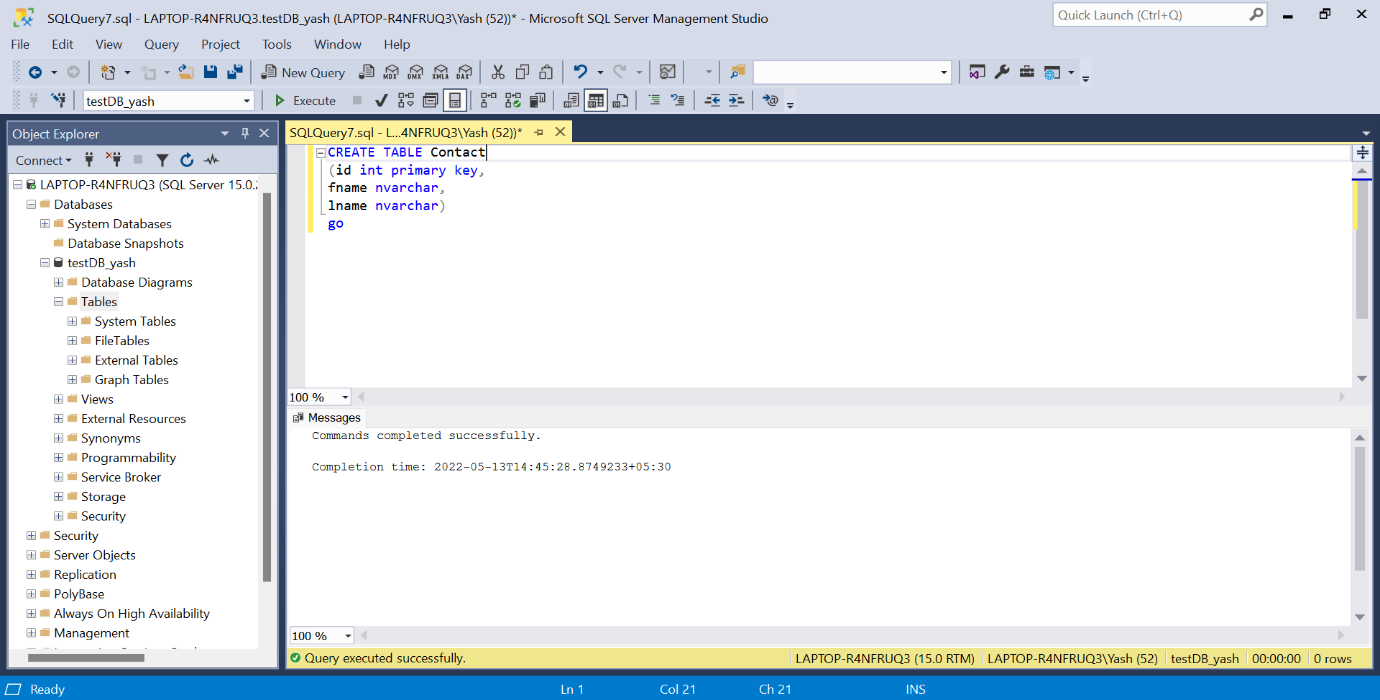
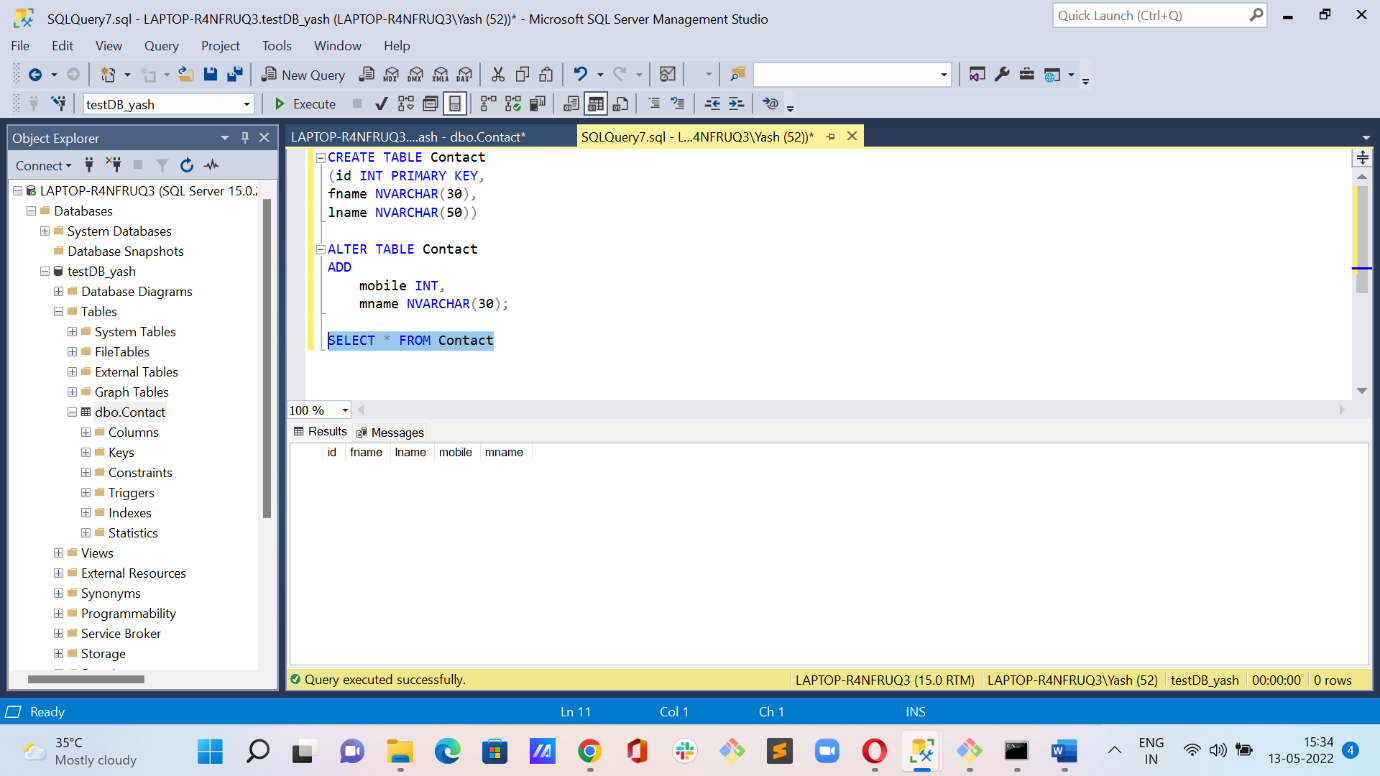
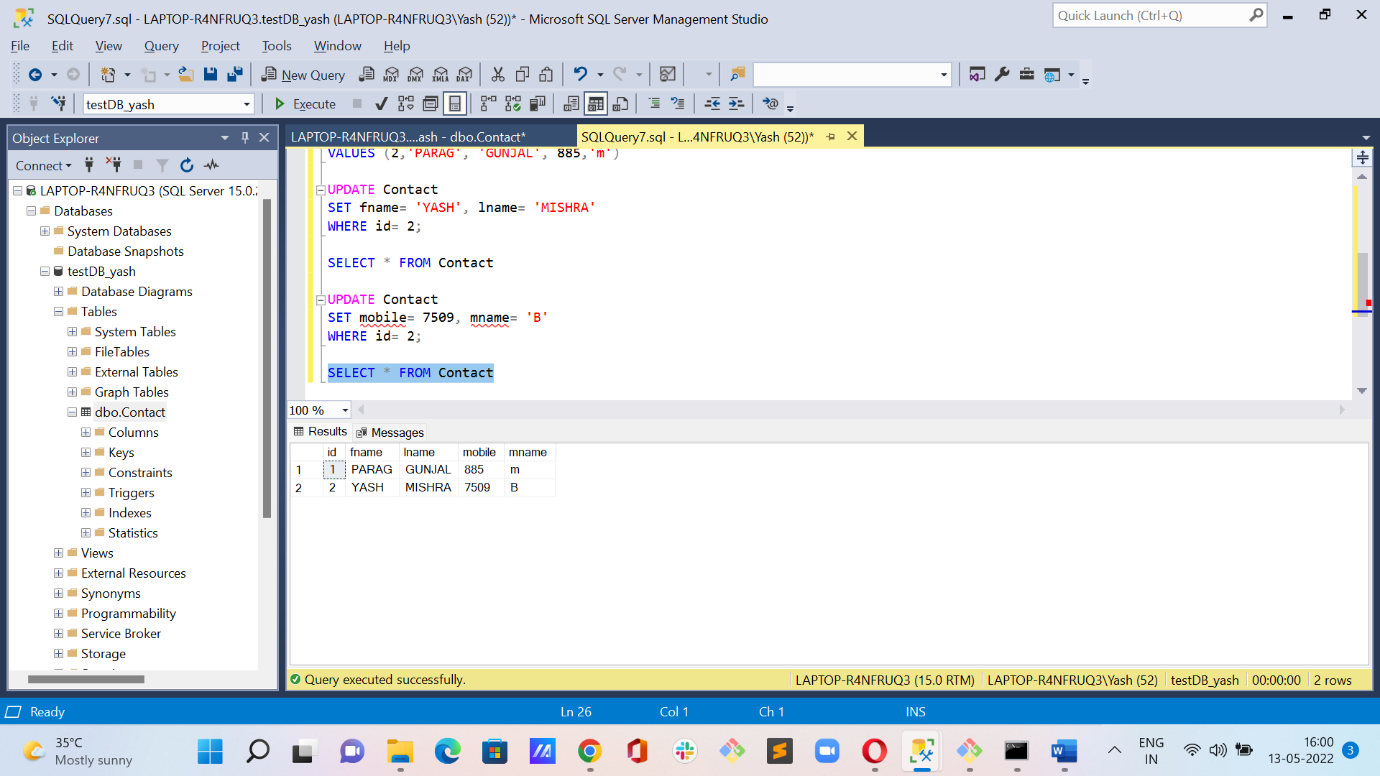
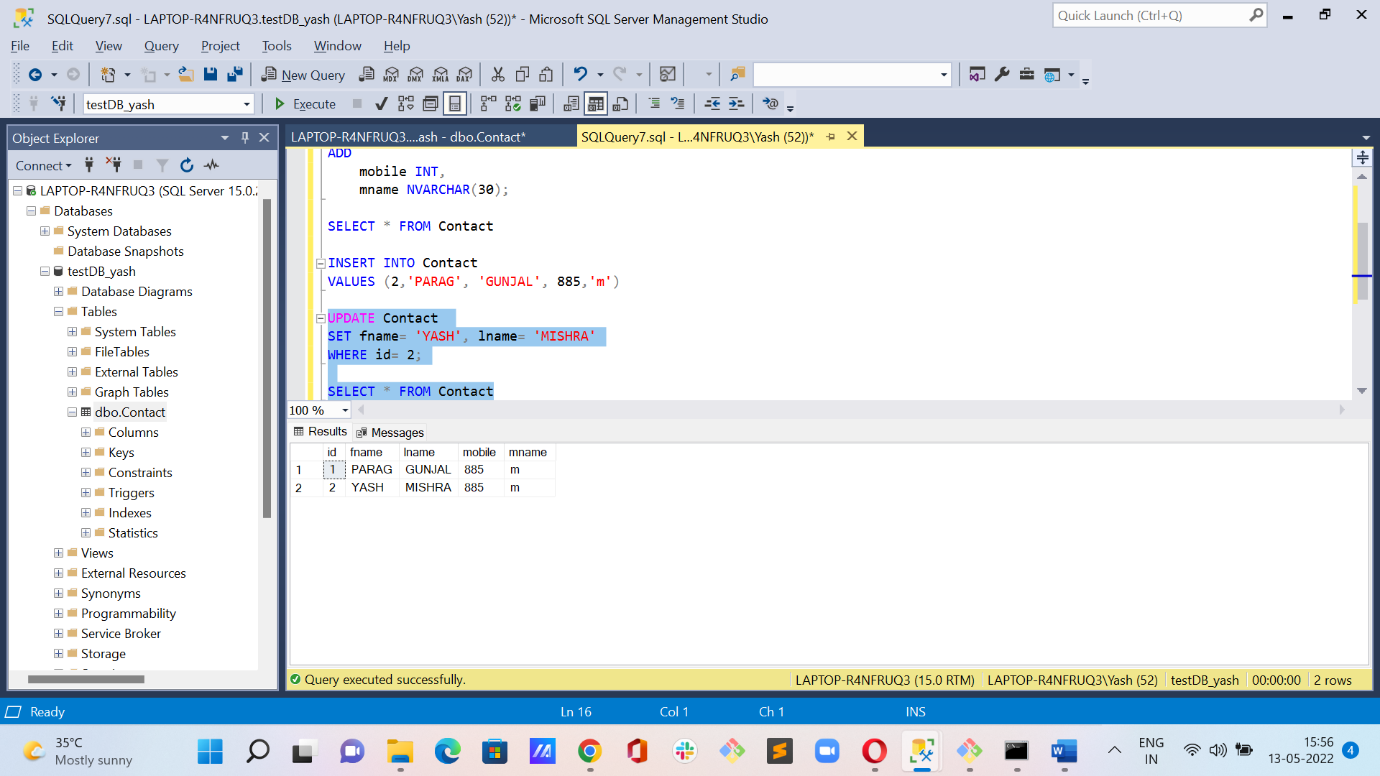
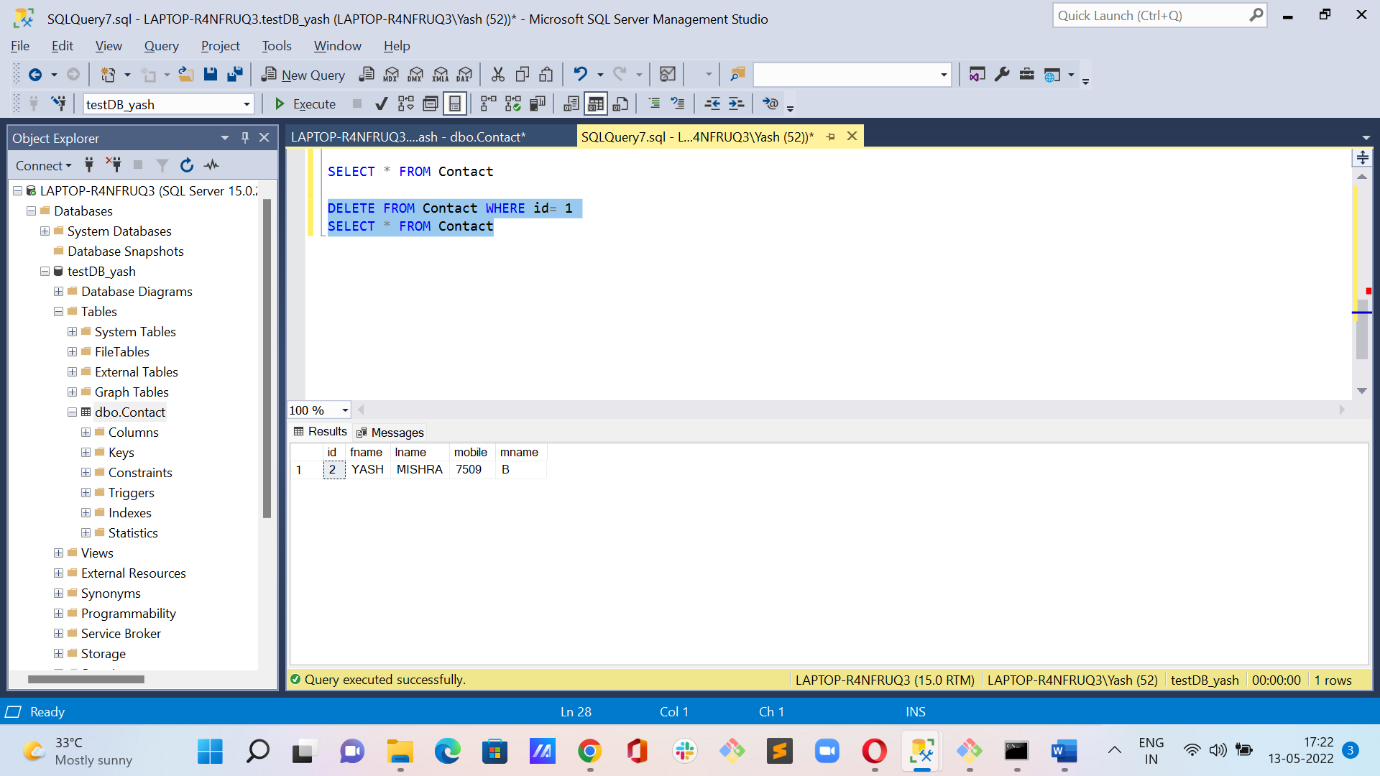
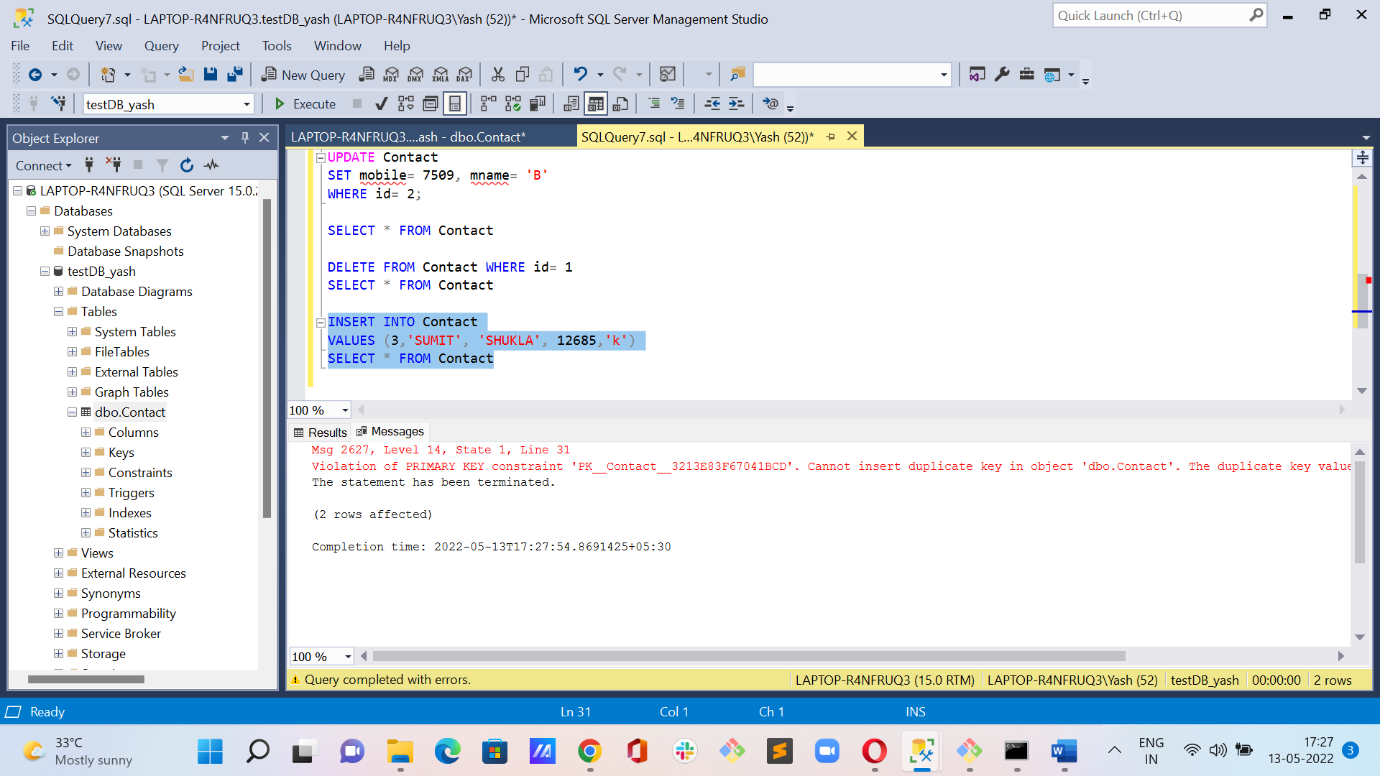
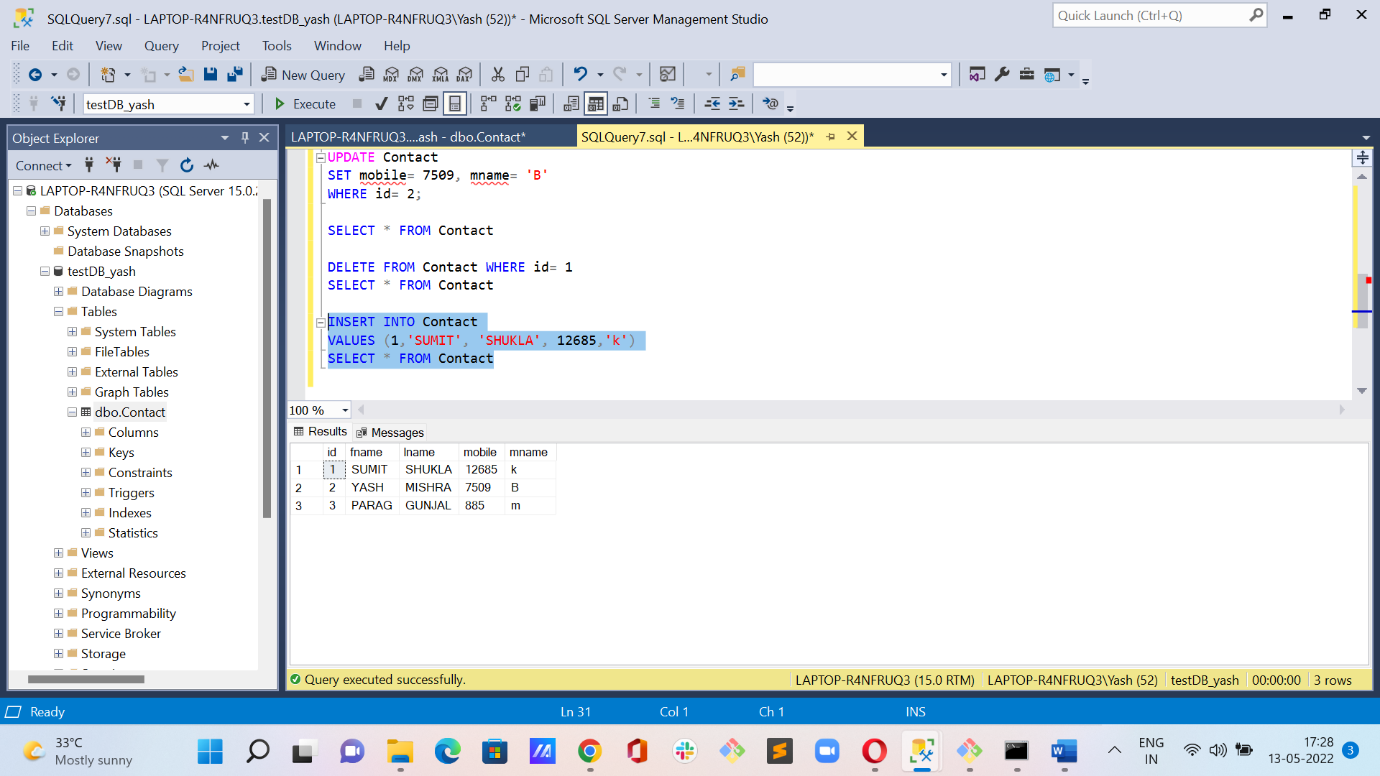
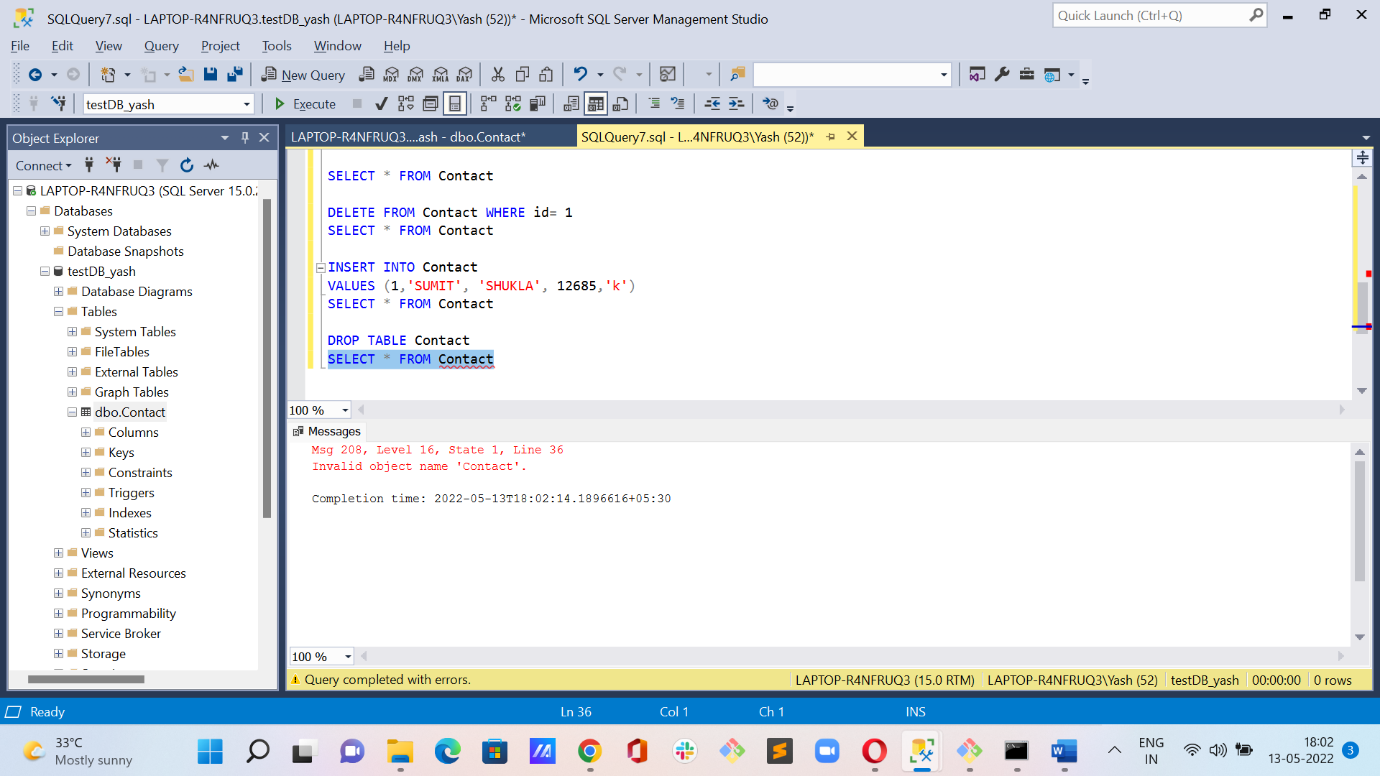
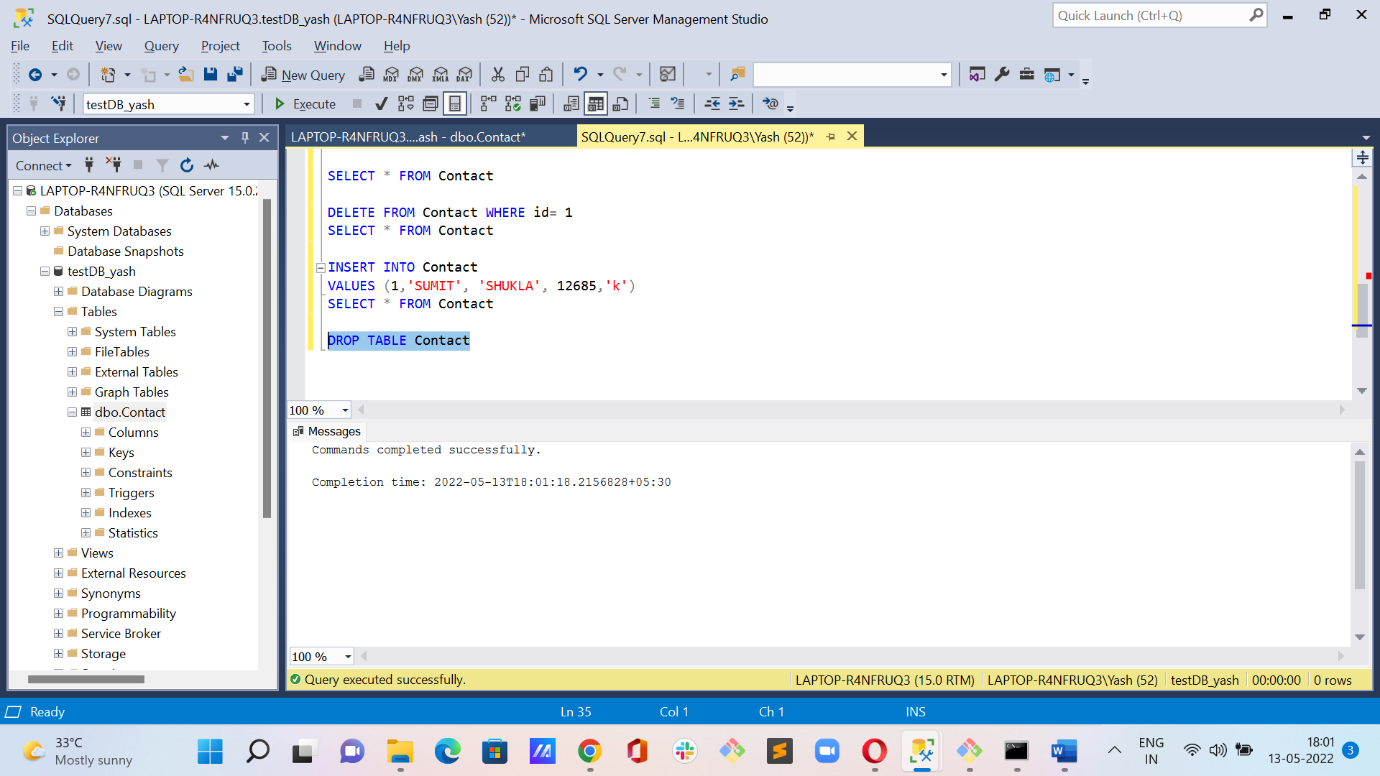
List of DDL commands:

* **CREATE**: This command is used to create the database or its objects (like table, index, function, views, store procedure, and triggers).
* **DROP**: This command is used to delete objects from the database.
* **ALTER:**This is used to alter the structure of the database.
* **TRUNCATE:**This is used to remove all records from a table, including all spaces allocated for the records are removed.
* **COMMENT**: This is used to add comments to the data dictionary.
* **RENAME:**This is used to rename an object existing in the database.

**DML**

The SQL commands that deals with the manipulation of data present in the database belong to DML or Data Manipulation Language and this includes most of the SQL statements. It is the component of the SQL statement that controls access to data and to the database. Basically, DCL statements are grouped with DML statements.

List of DML commands:

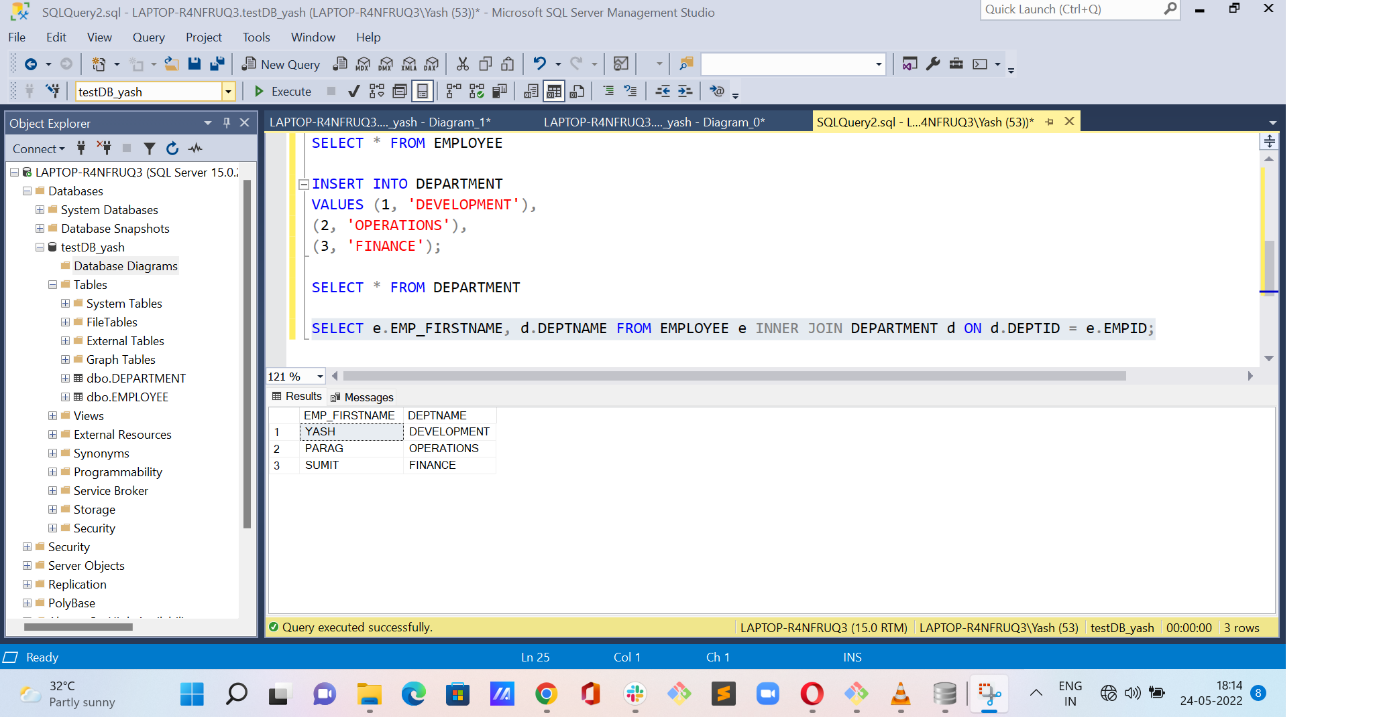
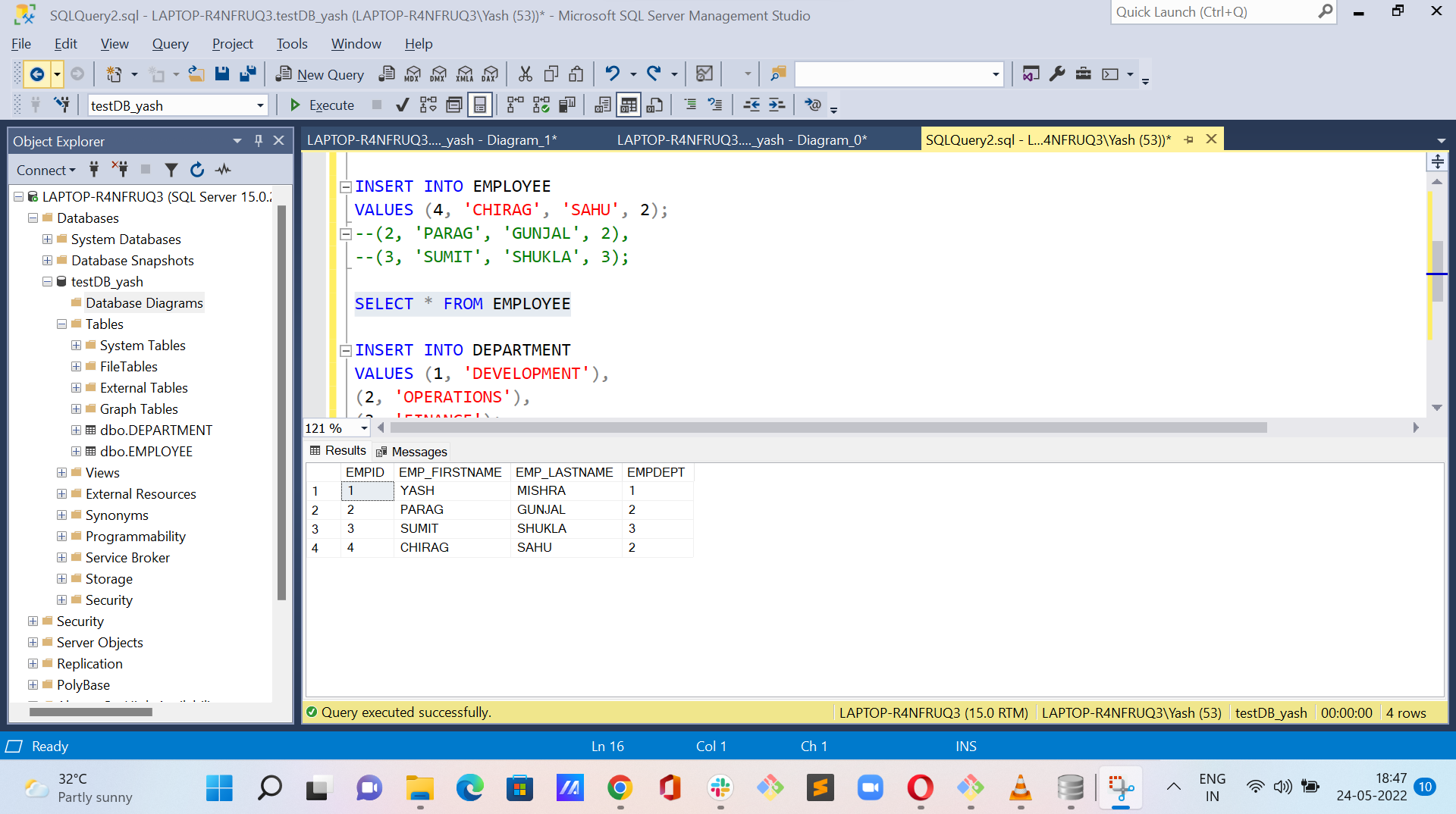
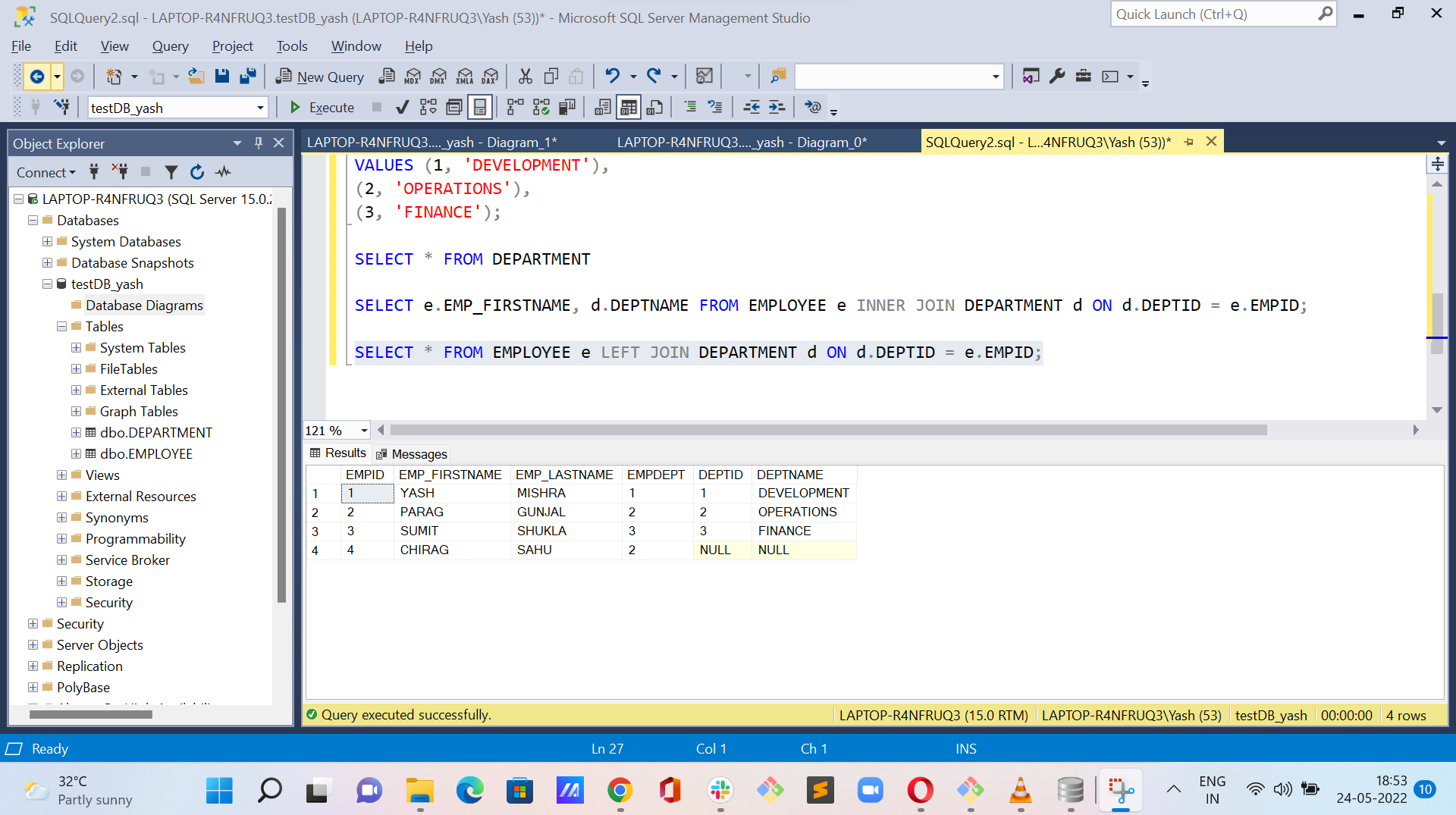
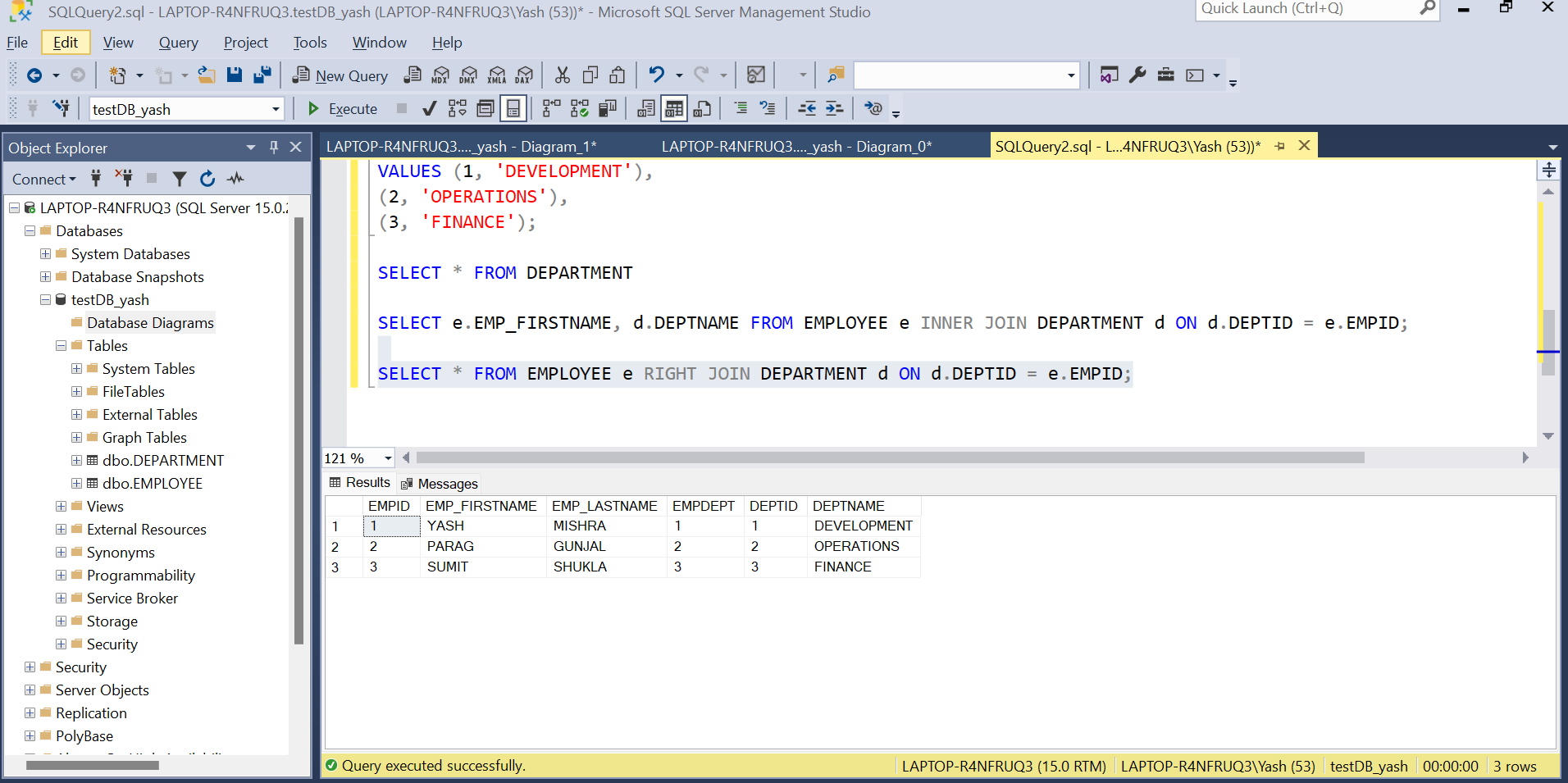
* **INSERT**: It is used to insert data into a table.
* **UPDATE:** It is used to update existing data within a table.
* **DELETE** : It is used to delete records from a database table.
* **CREATE TABLE CONTACT**
* **ALTER TABLE CONTACT AND SELECT \* FROM CONTACT**
* **UPDATE TABLE CONTACT AND SELECT \* FROM CONTACT**
* **DELETE TABLE CONTACT AND SELECT \* FROM CONTACT**
* **INSERT NEW RECORD AND SELECT \* FROM CONTACT**
* **INSERTING NEW RECORD AT SAME ID=3 AND SELECT \* FROM CONTACT**
* **INSERTING NEW RECORD AT DELETED ID=1 AND SELECT \* FROM CONTACT(ERROR: RECORD ADDED(PRIMARY KEY PRINCIPLE VIOLATED)**
* DOUBT- How did the record got added at id(primary key)= 1 which was deleted previously ? Need to understand what’s wrong here because, primary key doesn’t let use the same id even after deletion of record at that particular id.
* **DROP TABLE CONTACT AND SELECT \* FROM CONTACT**

SQL JOIN

A JOIN clause is used to combine rows from two or more tables, based on a related column between them.

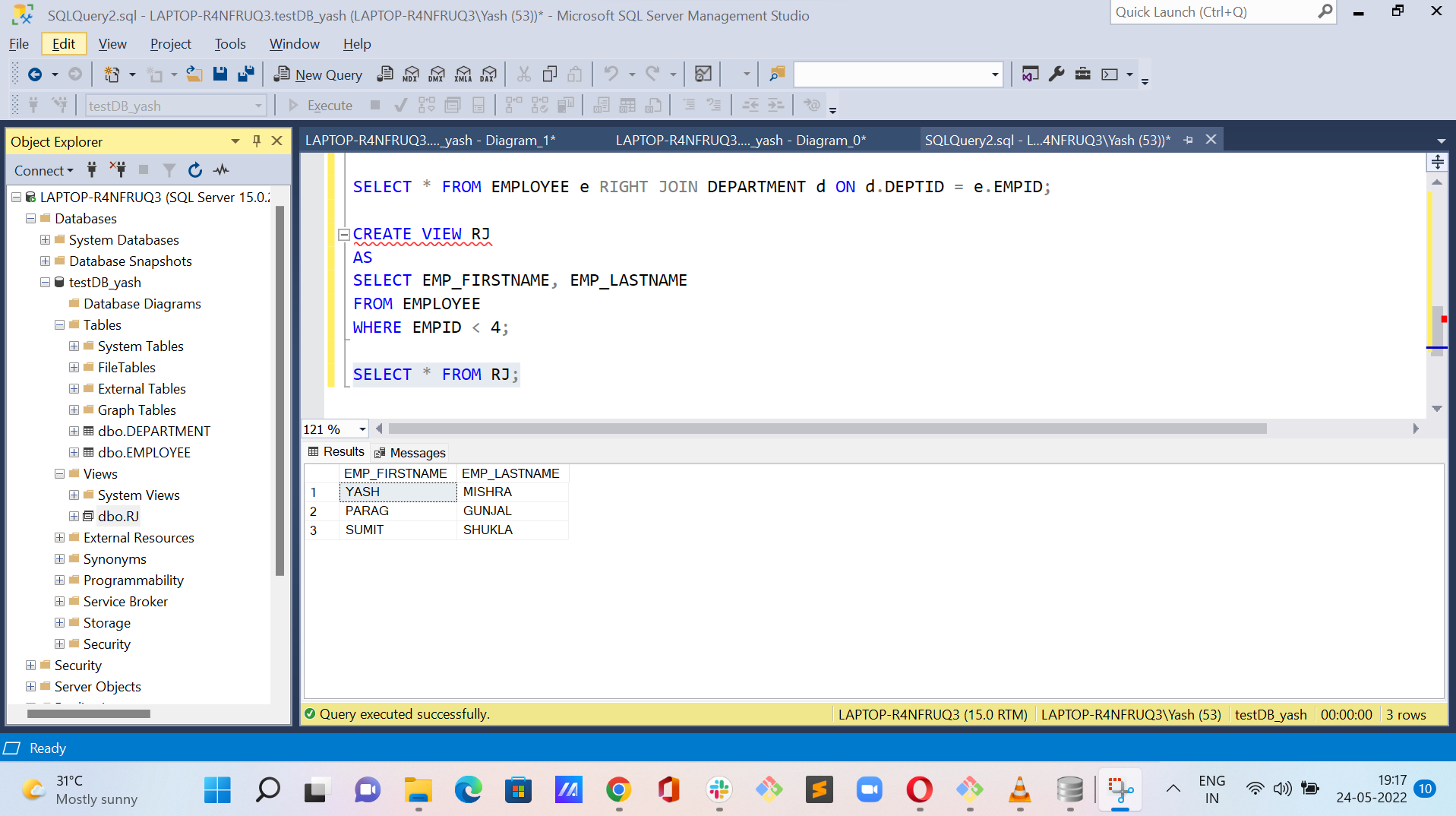
## Different Types of SQL JOINs

Here are the different types of the JOINs 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
* **INNER JOIN BETWEEN TABLES EMPLOYEE AND DEPARTMENT**
* **LEFT JOIN BETWEEN TABLES EMPLOYEE AND DEPARTMENT** **** 
* **RIGHT JOIN BETWEEN TABLES EMPLOYEE AND DEPARTMENT** ****

# SQL | Views

Views in SQL are kind of virtual tables. A view also has rows and columns as they are in a real table in the database. We can create a view by selecting fields from one or more tables present in the database. A View can either have all the rows of a table or specific rows based on certain condition.

* **CREATE VIEW RJ FROM TABLE EMPLOYEE** ****

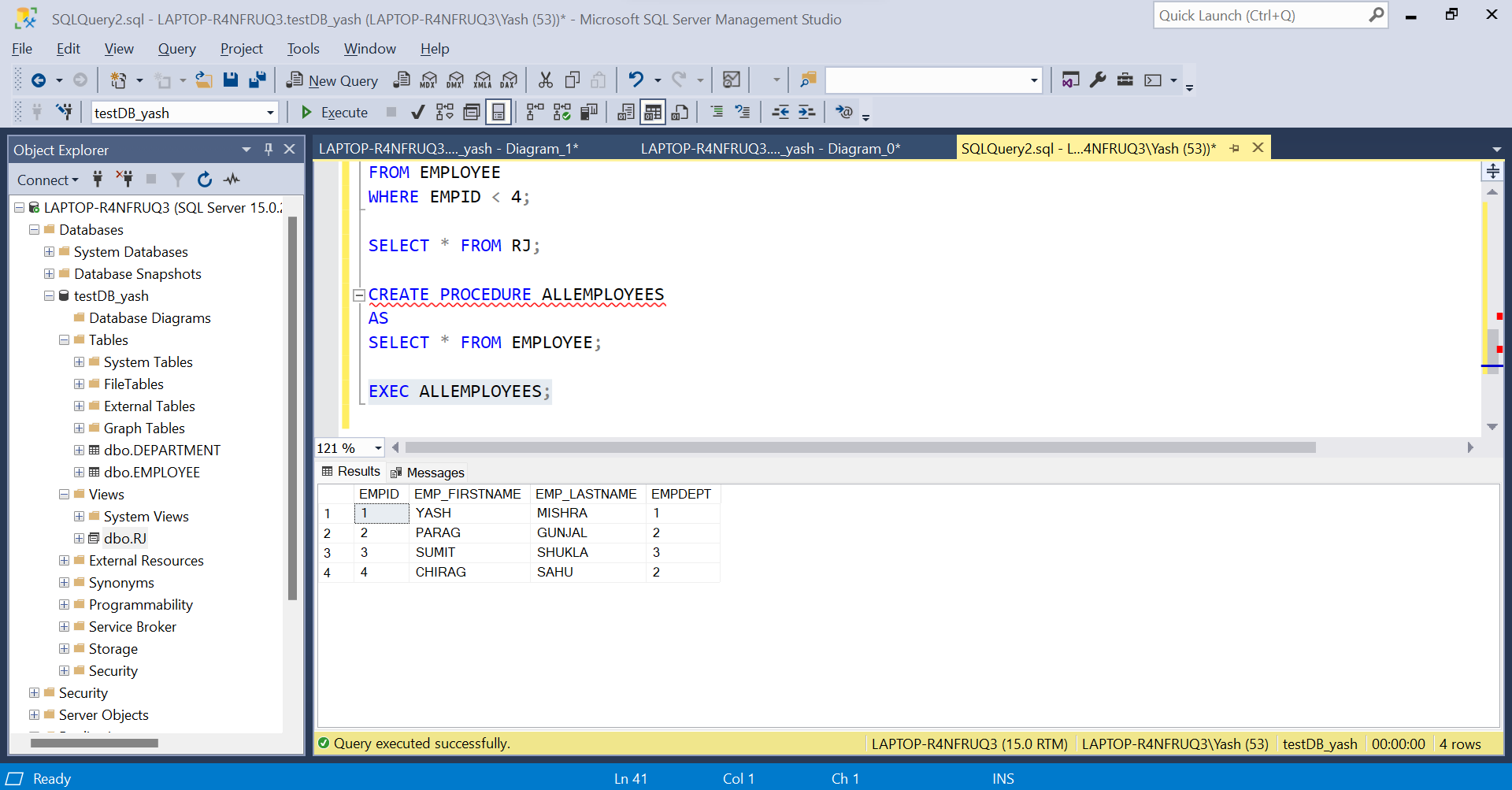
## What is a Stored Procedure?

A stored procedure is a prepared SQL code that you can save, so the code can be reused over and over again.

So if you have an SQL query that you write over and over again, save it as a stored procedure, and then just call it to execute it.

You can also pass parameters to a stored procedure, so that the stored procedure can act based on the parameter value(s) that is passed.

**CREATE PROCEDURE ALLEMPLOYEE FROM TABLE EMPLOYEE**

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### **Function in SQL Server**

* A function is also a database object in SQL Server. It’s essentially a sequence of SQL statements that take only input parameters, execute tasks, and return the output.
* A function in SQL Server is compiled and executed whenever it is called. Additionally, a function can only return a single value or table.

