LAB # 1

EXPLORING SQL SERVER 2012

OBJECTIVE

Overview of the features of SQL SERVER 2012

THEORY

A ***database (db)*** is an organized collection of data, typically stored in electronic format. It allows you to input, organize, and retrieve data quickly. Traditional databases are organized by fields, records, and files. To better understand what a database is, consider the telephone book as a simple example.

If you had the telephone book stored on disk, the book would be the file. Within the telephone book, you would have a list of records each of which contains a name, address, and telephone number. These single pieces of information (name, address, phone number) would each constitute a separate field.

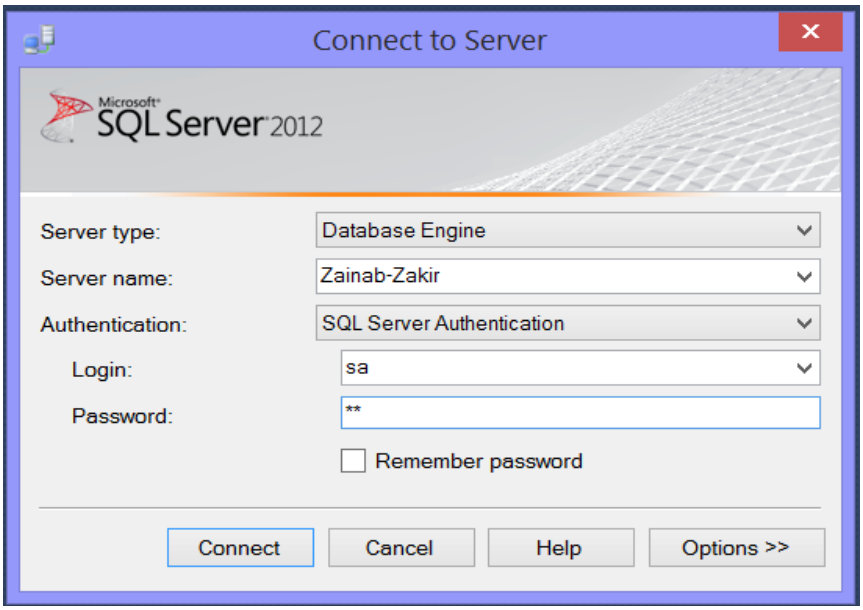
Because a database can store thousands of records, it would be a chore if you had to open a table and go through each record one at a time until you found the record you needed. Of course, the process would be even more difficult if you had to retrieve multiple records.

Thankfully, you don't have to go through database records in this way. Rather, to retrieve data within a database, you run a database ***query***, which is an inquiry into the database that returns information back from the database. In other words, a query is used to ask for information from a database.

Databases are often found on ***database servers*** so that they can be accessed by multiple users and provide a high level of performance. One popular database server is Microsoft SQL Server. Database servers like SQL Server do not actually house graphical programs, word-processing applications, or any other type of applications. Instead, these servers are entirely optimized to serve only the purposes of the database itself, usually using advanced hardware that can handle the high processing needs of the database. It is also important to note that these servers do not act as workstations; they generally are mounted on racks located in a central data center and can be accessed only through an administrator's desktop system.

Creating Database by SQL SERVER Management Studio

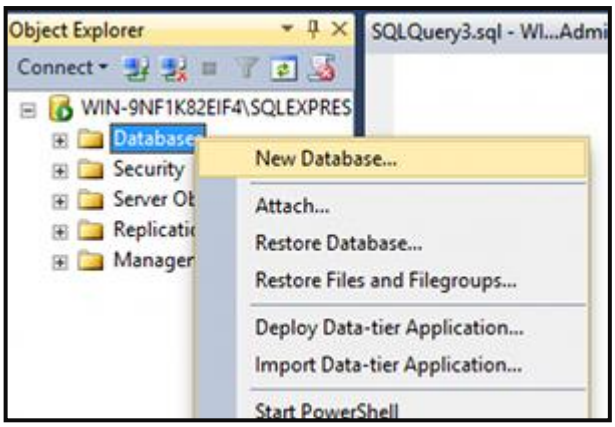
Select Start-->All Programs-->Microsoft SQL Server-->SQL SERVER Management Studio



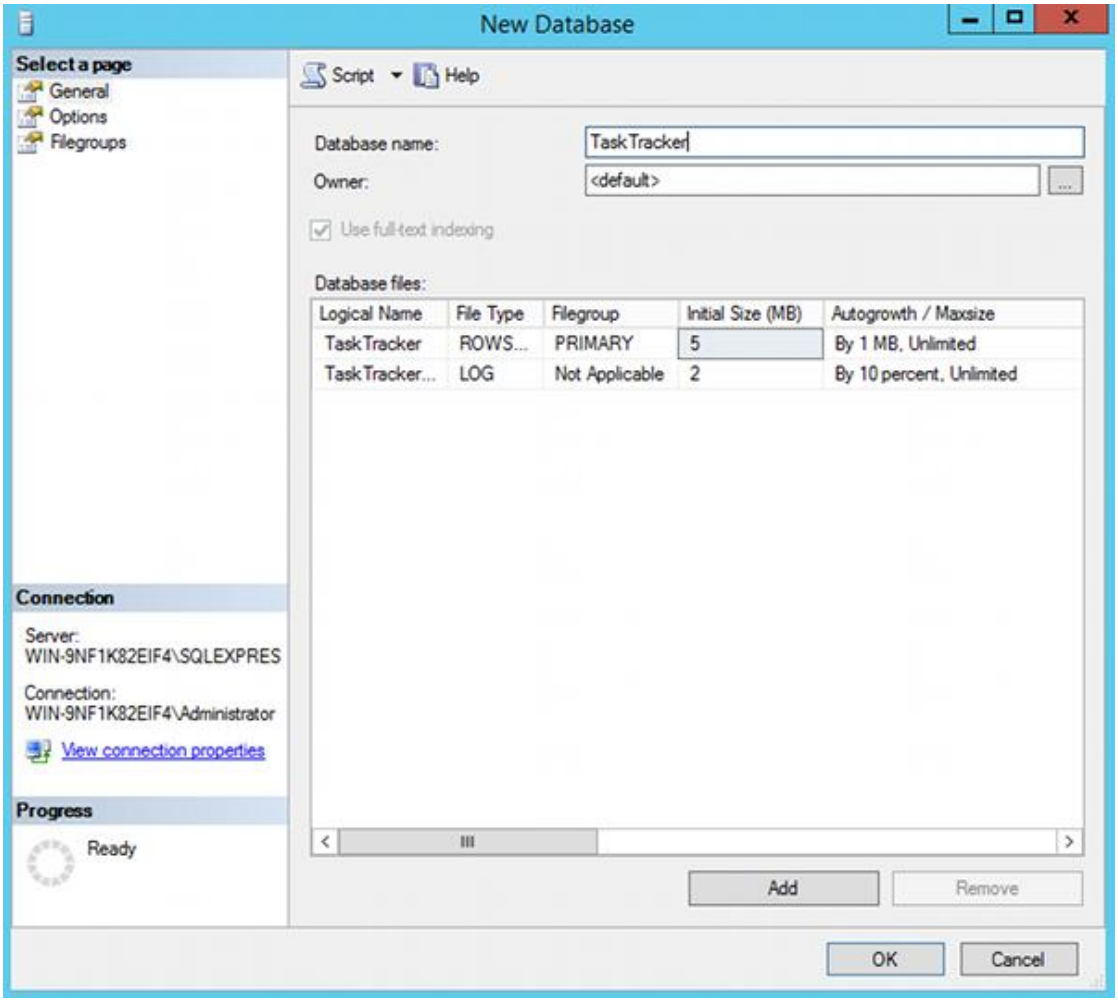
CREATE A DATABASE USING SSMS

The following steps demonstrate how to create a database in SQL Server 2012 using SQL Server Management Studio.

1. From the Object Explorer, right click on the Databases folder/icon and select New database...:

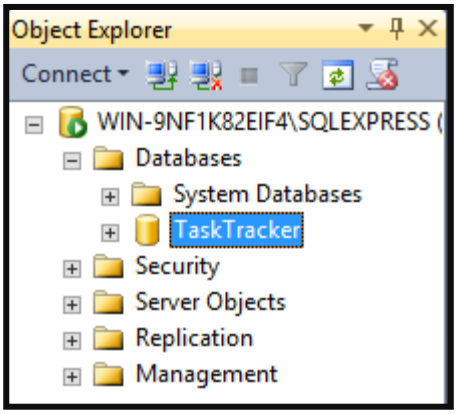


Name your database (I called mine TaskTracker) and click OK:



Your New Database

Your new database will appear under the Databases section of the Object Explorer (just under the System Databases folder). Here's mine:



CREATE A TABLE USING SSMS

Before you begin, be sure to launch SQL Server Management Studio. Make sure you've expanded the particular database in which you wish to create the new table, then follow these steps:

Step1 . Right-click the **Table** folder and select **New Table**, as shown in Figure 1-1:

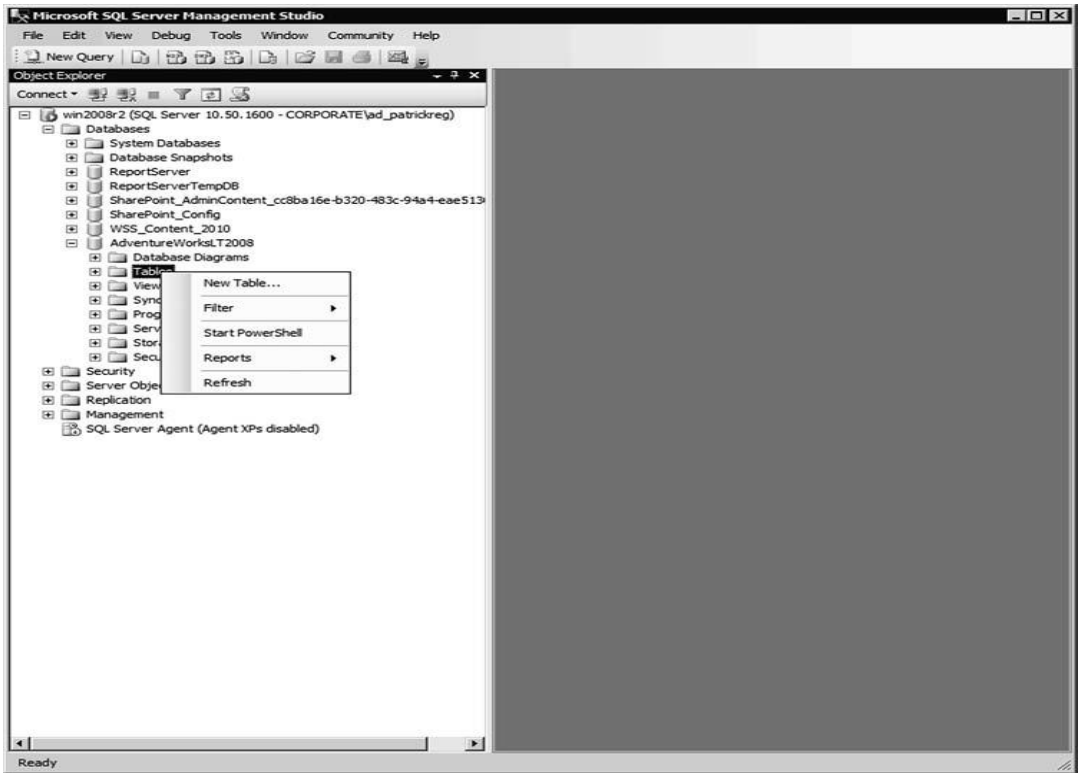


Figure 1-1 Creating a new table

Step 2. Use the information shown in Figure 1-2 to complete the details for Column Name, Data Type, and Length, as specified in the parentheses and Allow Nulls columns.

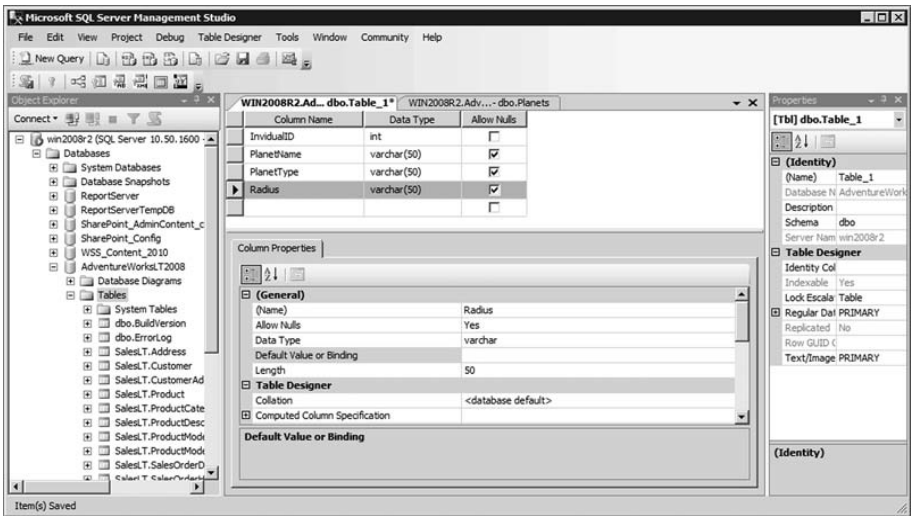


Figure 1-2 Column names and identifying informatio

Step 3. Set the Default Value of the DateCreated column to *(getdate())*; this will insert the current date within each new record for that specific field. See Figure 1-3.

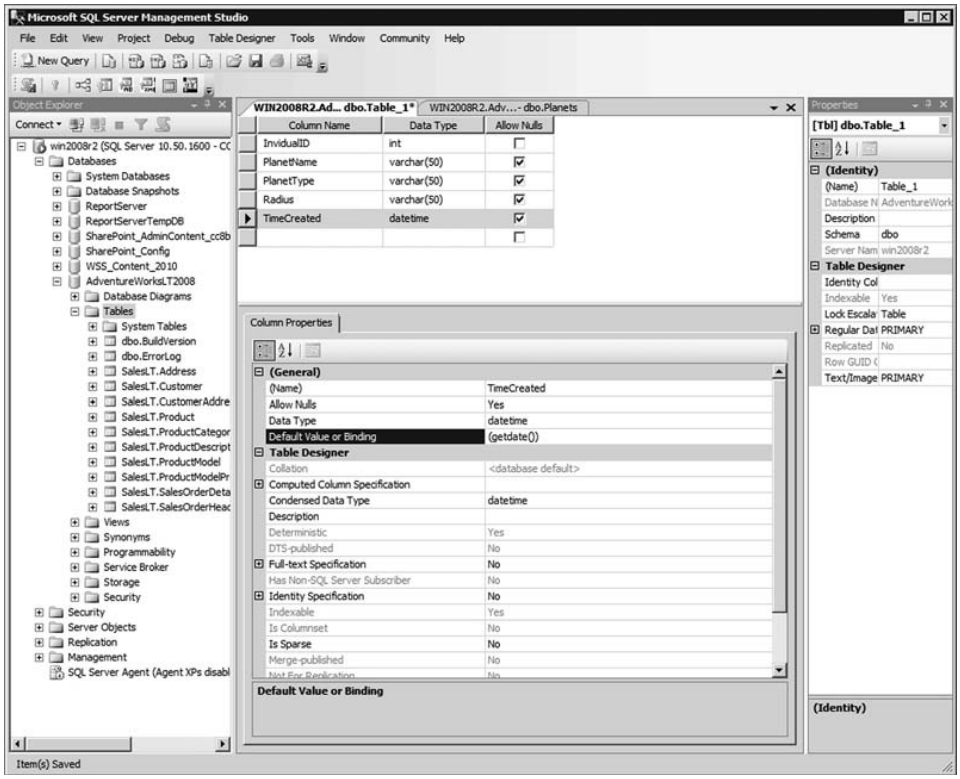


Figure 1-3 Setting the Table Designer properties

Step 4. Save your new table by selecting File > Save Table_1, as shown in Figure 1-4.

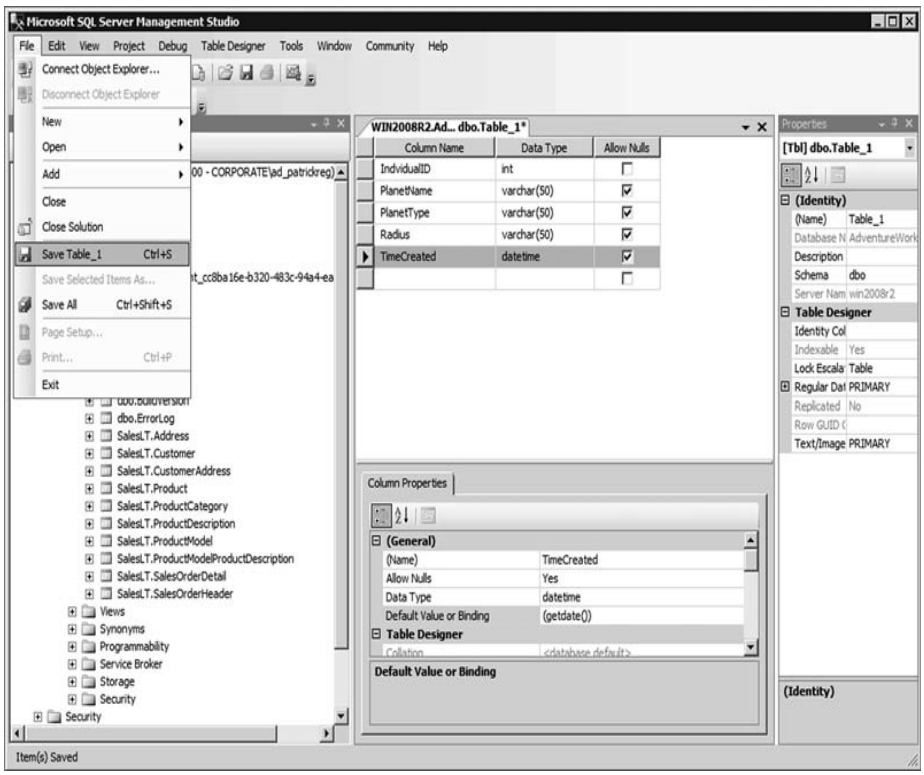


Figure 1-4 Saving the new table

Step 5. Type the new name of the table you are saving, as shown in Figure 1-5.

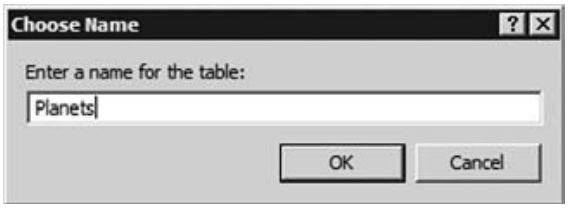


Figure 1-5 Naming the table

Your new table will appear under the **Tables** section, as depicted in Figure 1-6.

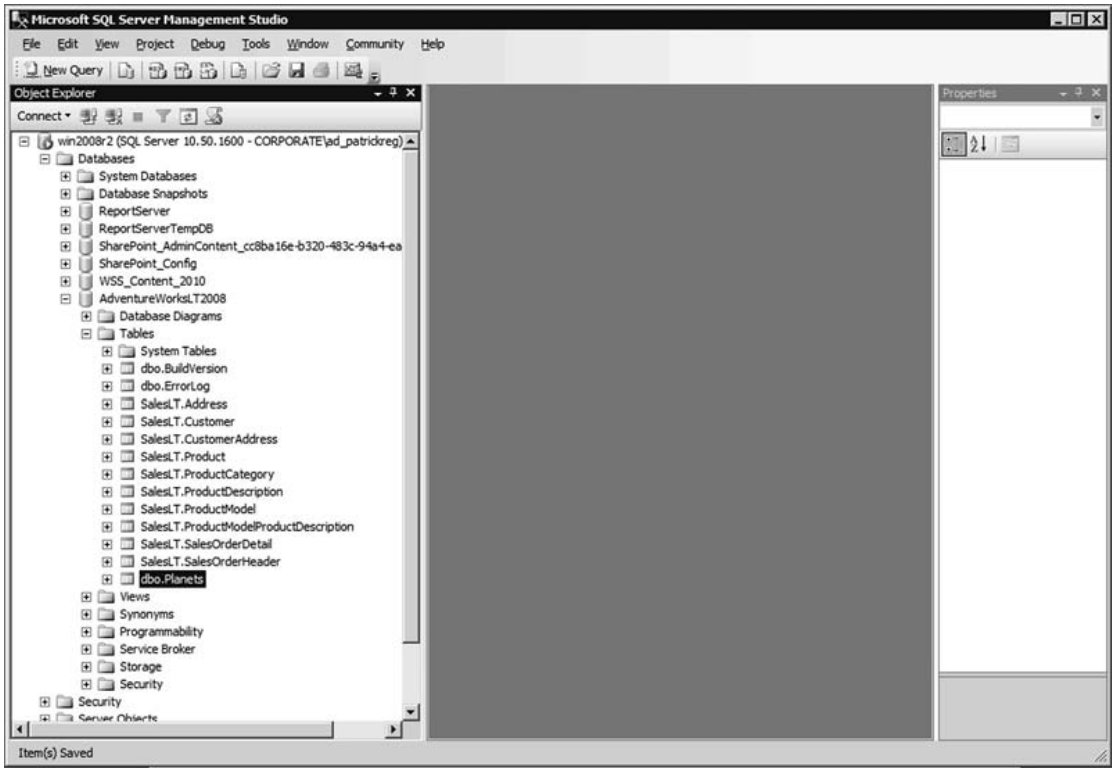


Figure 1-6 The newly created table

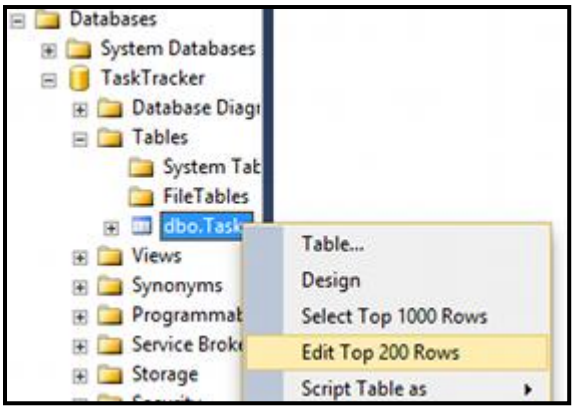
ADDING DATA

We can use the Edit Top 200 Rows option to manually type data directly into the table rows.

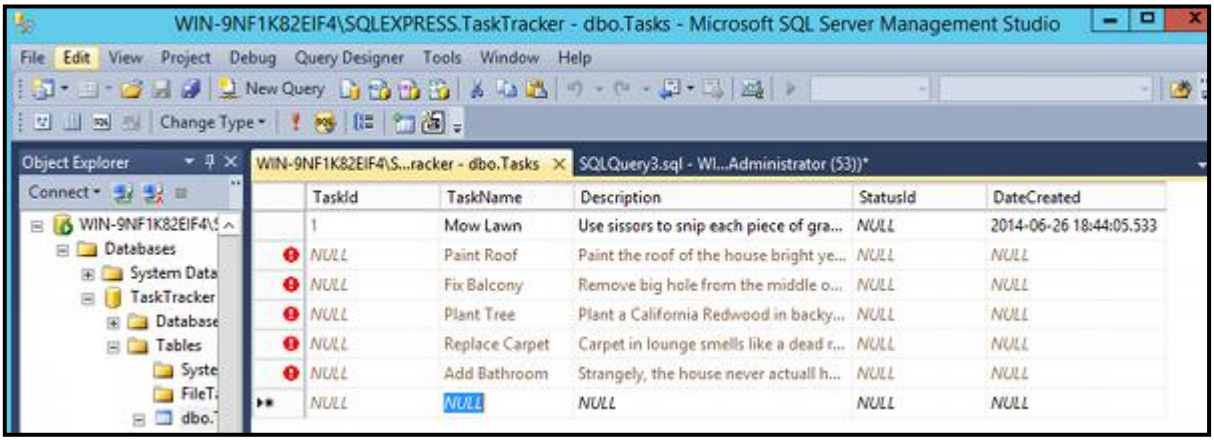
Manually entering data is OK if you only have a little bit of data to enter. But it's a bit clunky and can impractical if you have a lot of data. Plus it doesn't really suit most business needs, where non-technical users need to be able to update the database.

In any case, here's how to manually enter data directly into the table:

1. In the Object Explorer, right click on the table you wish to open, and select :

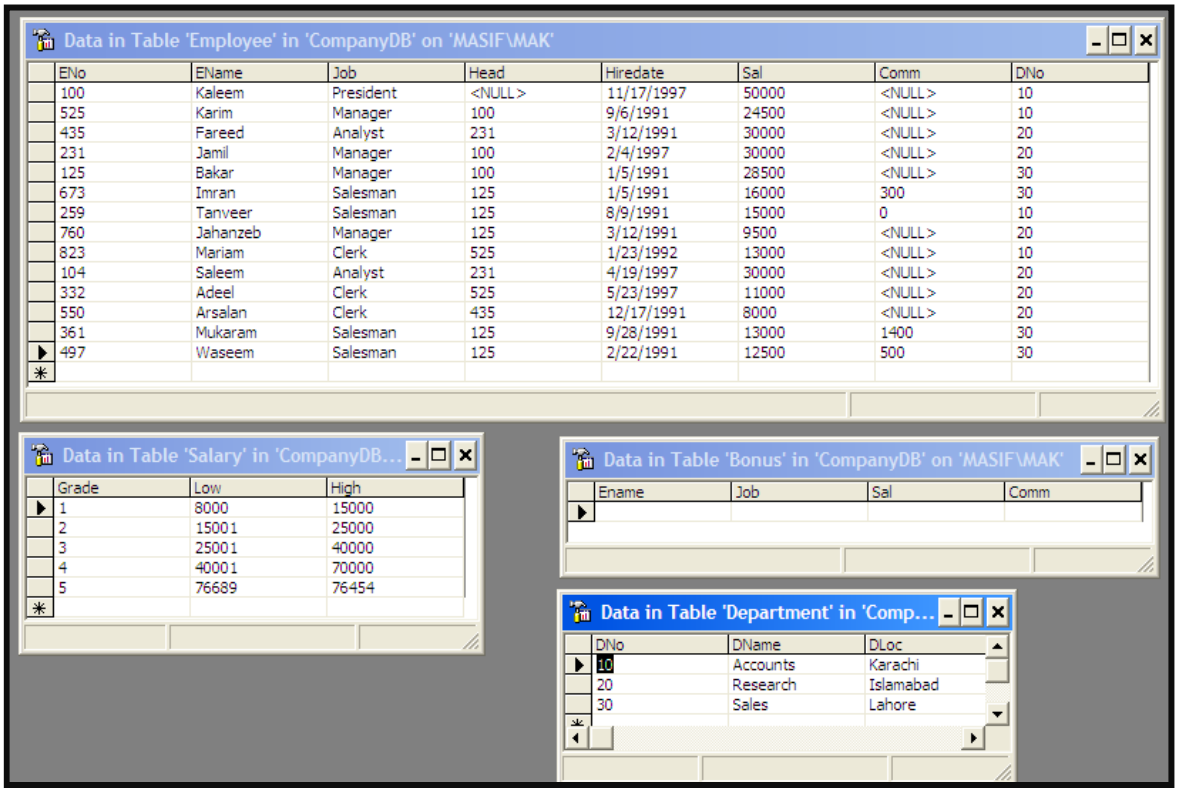


You can now start entering the data directly into your table.



LAB TASK

1. Create below tables



Data in Table 'Employee' in 'CompanyDB' on 'MASIF\MAK'

ENo	EName	Job	Head	Hiredate	Sal	Comm	DNo
100	Kaleem	President	<NULL>	11/17/1997	50000	<NULL>	10
525	Karim	Manager	100	9/6/1991	24500	<NULL>	10
435	Fareed	Analyst	231	3/12/1991	30000	<NULL>	20
231	Jamil	Manager	100	2/4/1997	30000	<NULL>	20
125	Bakar	Manager	100	1/5/1991	28500	<NULL>	30
673	Imran	Salesman	125	1/5/1991	16000	300	30
259	Tanveer	Salesman	125	8/9/1991	15000	0	10
760	Jahanzeb	Manager	125	3/12/1991	9500	<NULL>	20
823	Mariam	Clerk	525	1/23/1992	13000	<NULL>	10
104	Saleem	Analyst	231	4/19/1997	30000	<NULL>	20
332	Adeel	Clerk	525	5/23/1997	11000	<NULL>	20
550	Arsalan	Clerk	435	12/17/1991	8000	<NULL>	20
361	Mukaram	Salesman	125	9/28/1991	13000	1400	30
497	Waseem	Salesman	125	2/22/1991	12500	500	30

Data in Table 'Salary' in 'CompanyDB...

Grade	Low	High
1	8000	15000
2	15001	25000
3	25001	40000
4	40001	70000
5	76689	76454

Data in Table 'Bonus' in 'CompanyDB' on 'MASIF\MAK'

Ename	Job	Sal	Comm

Data in Table 'Department' in 'Comp...

DNo	DName	DLoc
10	Accounts	Karachi
20	Research	Islamabad
30	Sales	Lahore