



# DATABASE SYSTEMS

A Practical Approach to Design, Implementation, and  
Management

## ABSTRACT

The history of database research over the past 30 years is one of exceptional productivity that has led to the database system becoming arguably the most important development in the field of software engineering. The database is now the underlying framework of the information system, and has fundamentally changed the way many organizations operate.

- **Database** is a **centralized**, and **organized** collection of some logically related organizational data
- In database, data is organized using some **Data Model**

The methodology in each phase is presented as a series of steps. For the inexperienced designer, it is expected that the steps will be followed in the order described, and guidelines are provided throughout to help with this process.

Hamad Zia

7102

BSSE-B

4<sup>th</sup> Semester

Introduction to Database

## Lab Task 1:

# How to Install SQL Server in your PC

### Step 1:

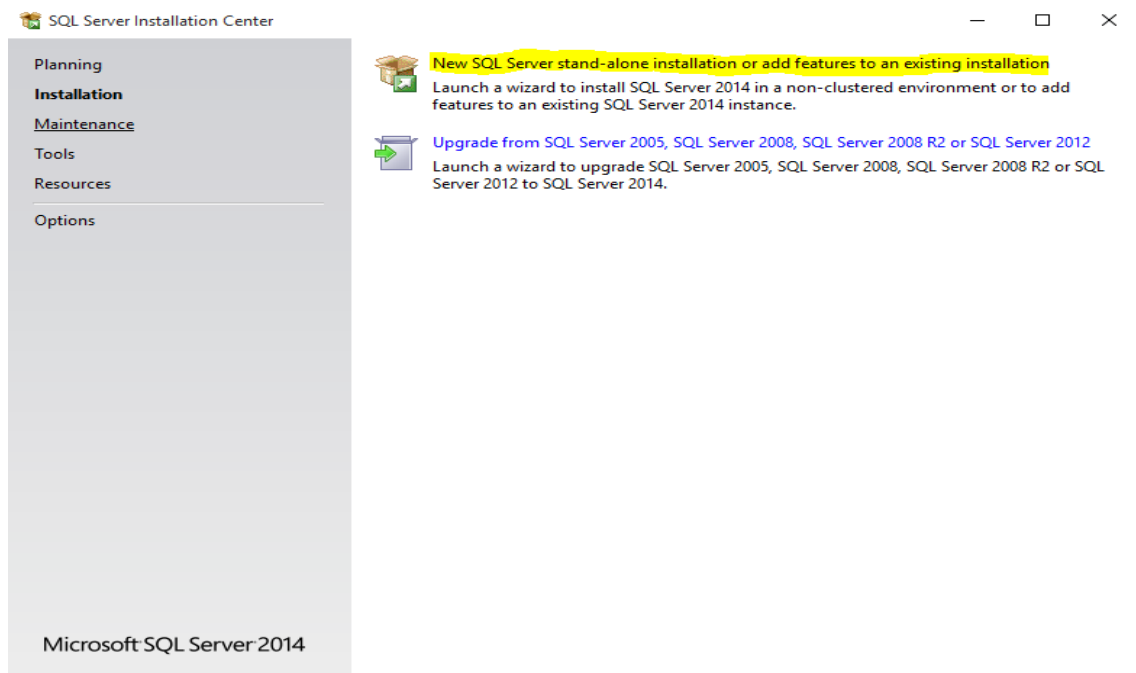
- Open folder (sql2014) in which the setup of sql2014 is pasted.
- Click on **SETUP**.

This PC > Local Disk (D:) > Softwares > sql 2014

Name	Date modified	Type	Size
1033_ENU_LP	3/11/2019 11:58 PM	File folder	
redist	3/12/2019 12:00 AM	File folder	
resources	3/12/2019 12:00 AM	File folder	
x86	3/12/2019 12:00 AM	File folder	
AUTORUN	2/7/2014 12:56 AM	Setup Information	1 KB
MEDIAINFO	2/22/2014 3:19 AM	XML Document	1 KB
PackageId.dat	3/13/2016 1:21 PM	DAT File	1 KB
<b>SETUP</b>	2/21/2014 5:17 PM	Application	70 KB
SETUP.EXE.CONFIG	1/17/2014 1:27 PM	CONFIG File	1 KB
SQLSETUPBOOTSTRAPPER.DLL	2/21/2014 5:20 PM	Application extens...	193 KB
SQMAPI.DLL	2/21/2014 5:20 PM	Application extens...	147 KB

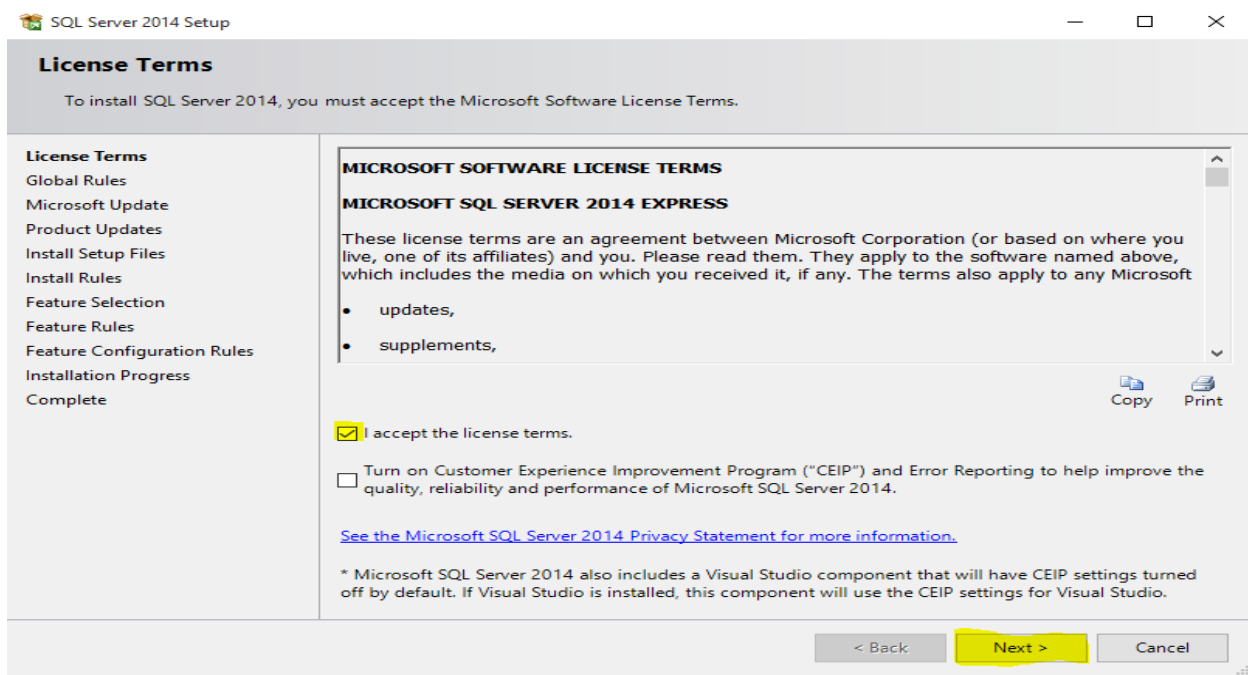
### Step 2:

- Click **New SQL Server stand-alone installation or add features to an existing installation**



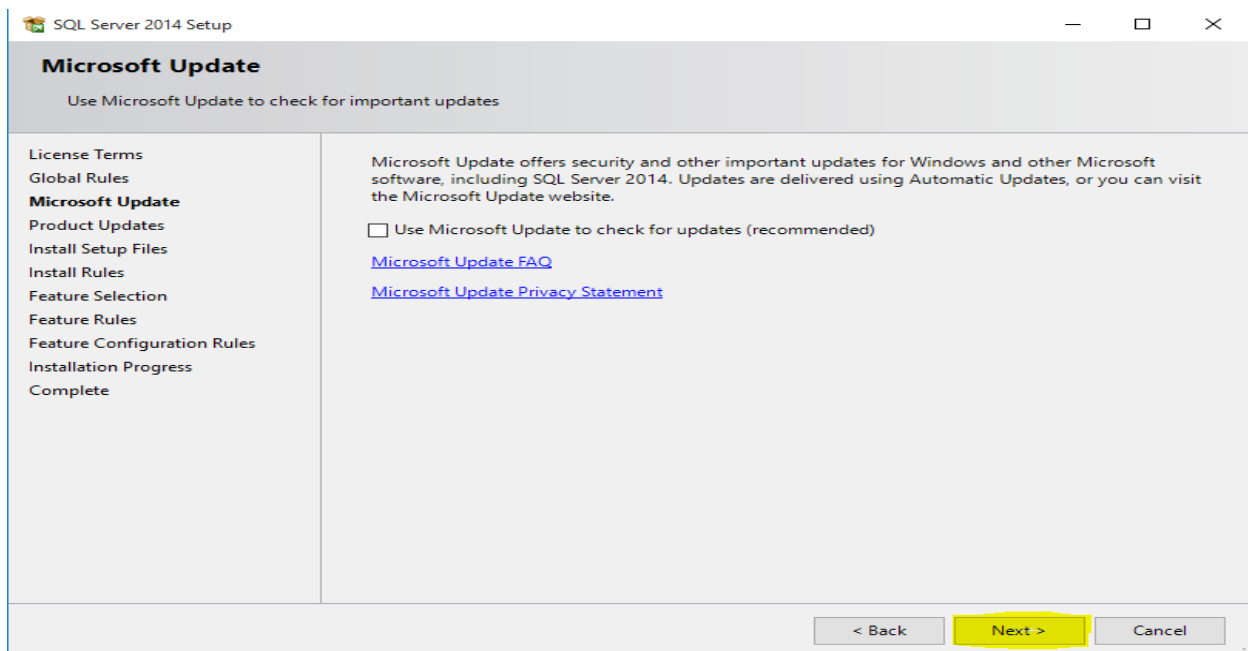
### Step 3:

- Click on checkbox and then click **Next >**.



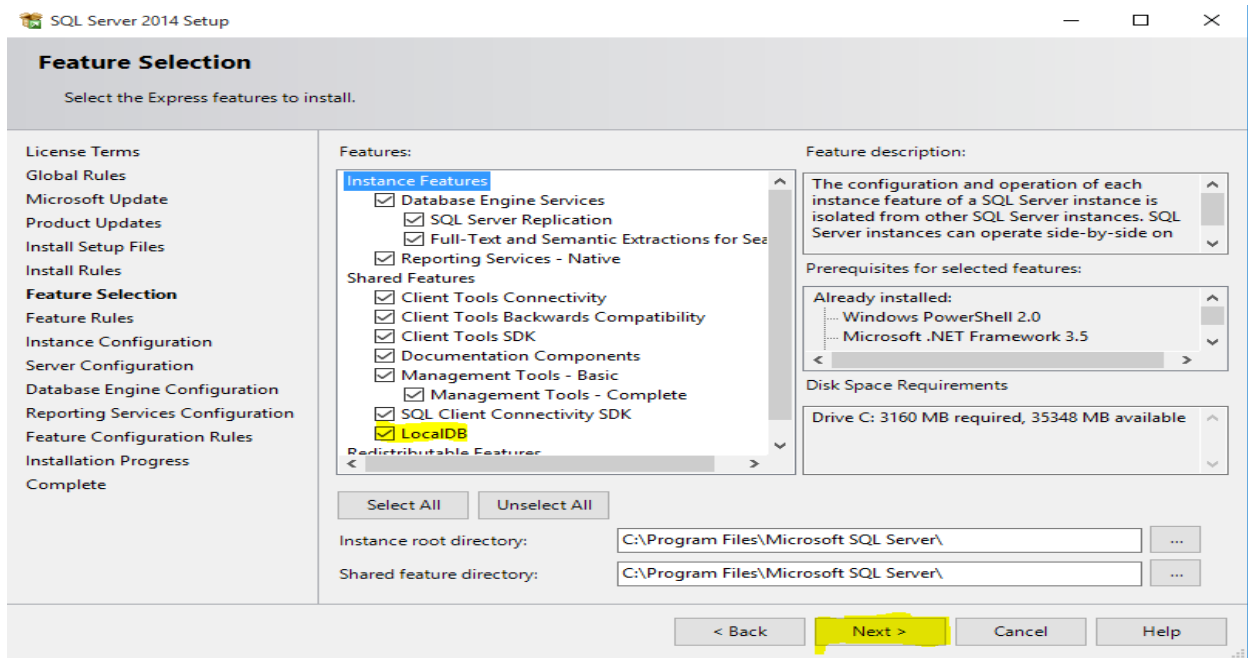
### Step 4:

- Click **Next >**.



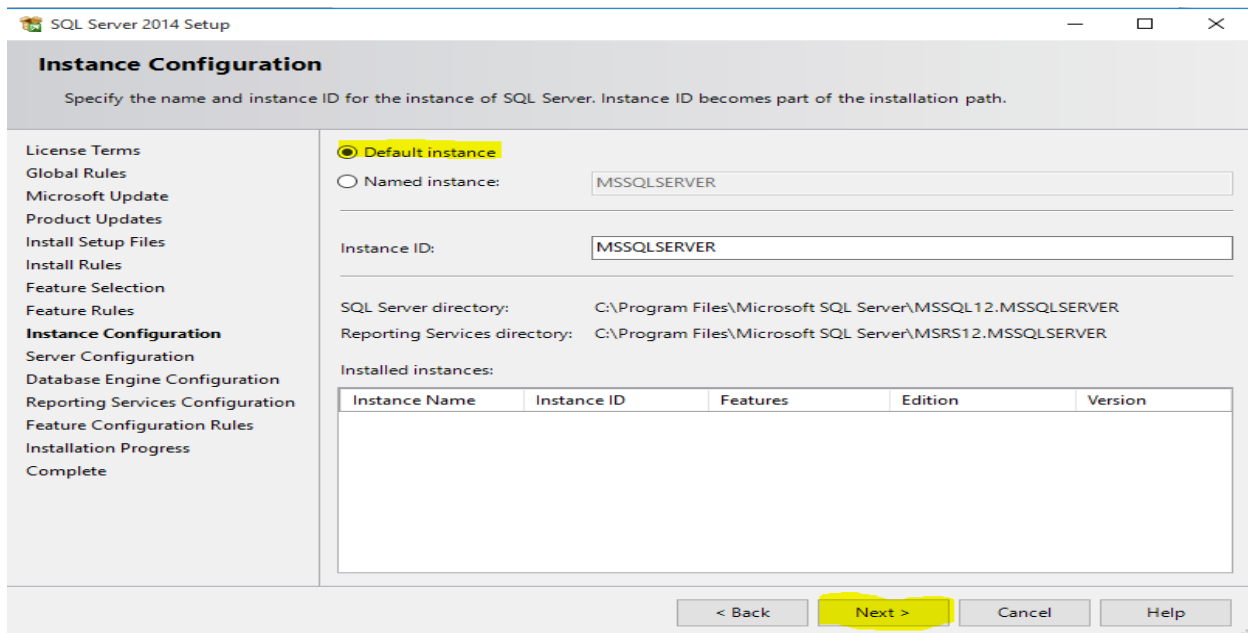
## Step 5:

- Click the checkbox of **LocalDB**, click **Next >**.



## Step 6:

- Select **Default instance**, click **Next >**.



## Step 7:

- Click **Next >**.

**SQL Server 2014 Setup**

**Server Configuration**  
Specify the service accounts and collation configuration.

License Terms  
Global Rules  
Microsoft Update  
Product Updates  
Install Setup Files  
Install Rules  
Feature Selection  
Feature Rules  
Instance Configuration  
**Server Configuration**  
Database Engine Configuration  
Reporting Services Configuration  
Feature Configuration Rules  
Installation Progress  
Complete

Service Accounts Collation

Microsoft recommends that you use a separate account for each SQL Server service.

Service	Account Name	Password	Startup Type
SQL Server Database Engine	NT Service\MSSQLSERVER		Automatic
SQL Server Reporting Services	NT Service\ReportServer		Automatic
SQL Full-text Filter Daemon Launc...	NT Service\MSSQLFDLa...		Manual
SQL Server Browser	NT AUTHORITY\LOCAL ...		Disabled

< Back **Next >** Cancel Help

## Step 8:

- Click **Next >**.

**SQL Server 2014 Setup**

**Database Engine Configuration**  
Specify Database Engine authentication security mode, administrators and data directories.

License Terms  
Global Rules  
Microsoft Update  
Product Updates  
Install Setup Files  
Install Rules  
Feature Selection  
Feature Rules  
Instance Configuration  
Server Configuration  
**Database Engine Configuration**  
Reporting Services Configuration  
Feature Configuration Rules  
Installation Progress  
Complete

Server Configuration Data Directories User Instances FILESTREAM

Specify the authentication mode and administrators for the Database Engine.

Authentication Mode

☒ Windows authentication mode

☐ Mixed Mode (SQL Server authentication and Windows authentication)

Specify the password for the SQL Server system administrator (sa) account.

Enter password:

Confirm password:

Specify SQL Server administrators

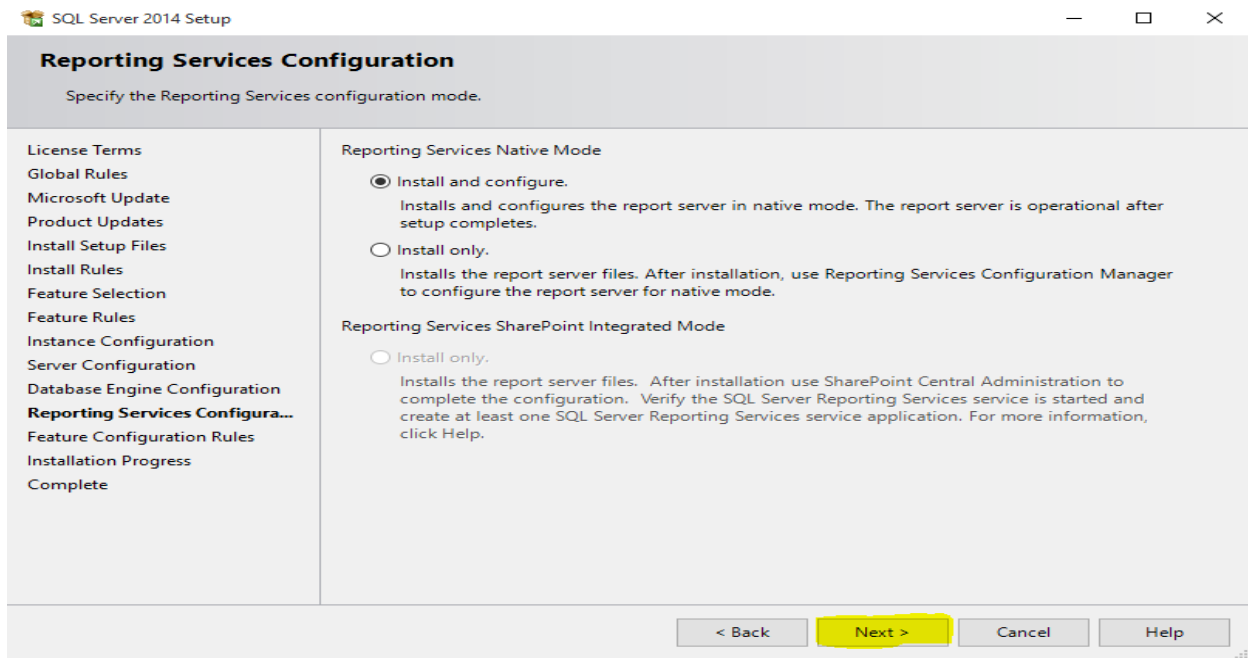
DESKTOP-MGBF2CJ\Hamad Zia (Hamad Zia)	SQL Server administrators have unrestricted access to the Database Engine.

Add Current User Add... Remove

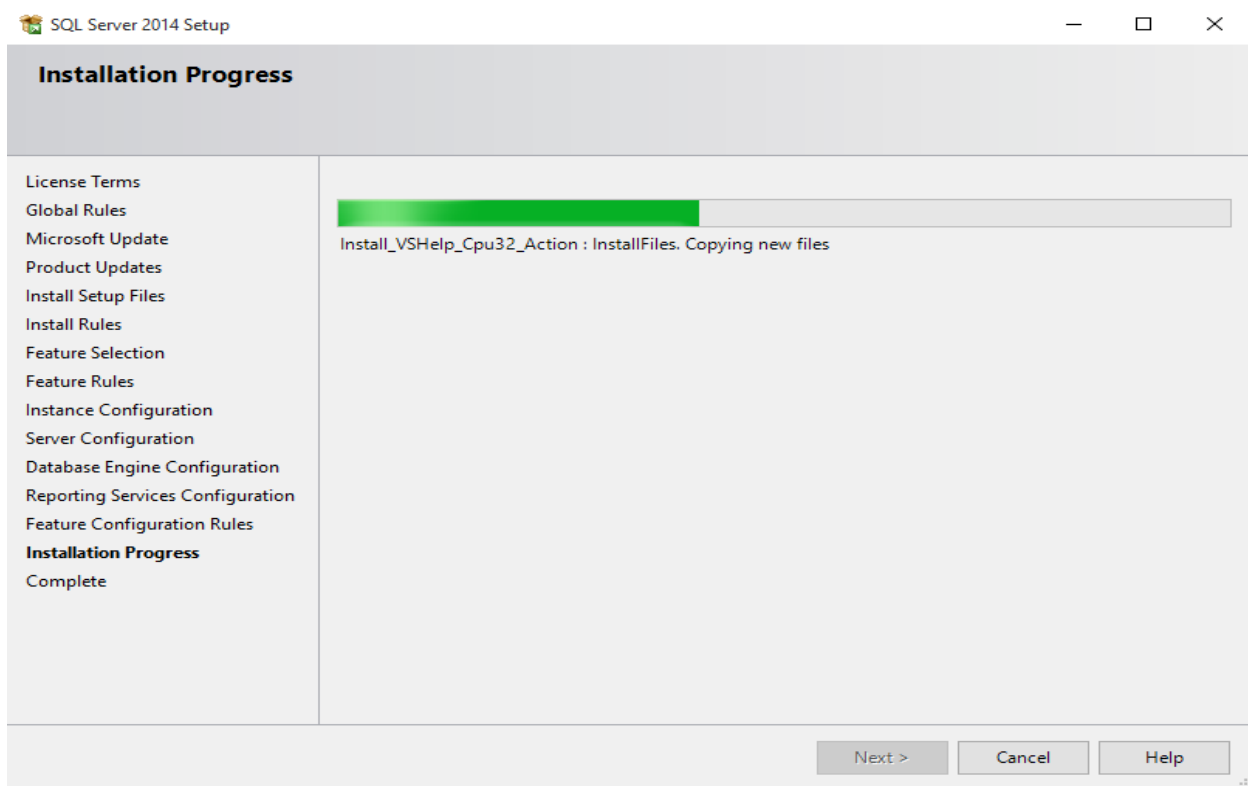
< Back **Next >** Cancel Help

## Step 9:

- Click **Next >**.

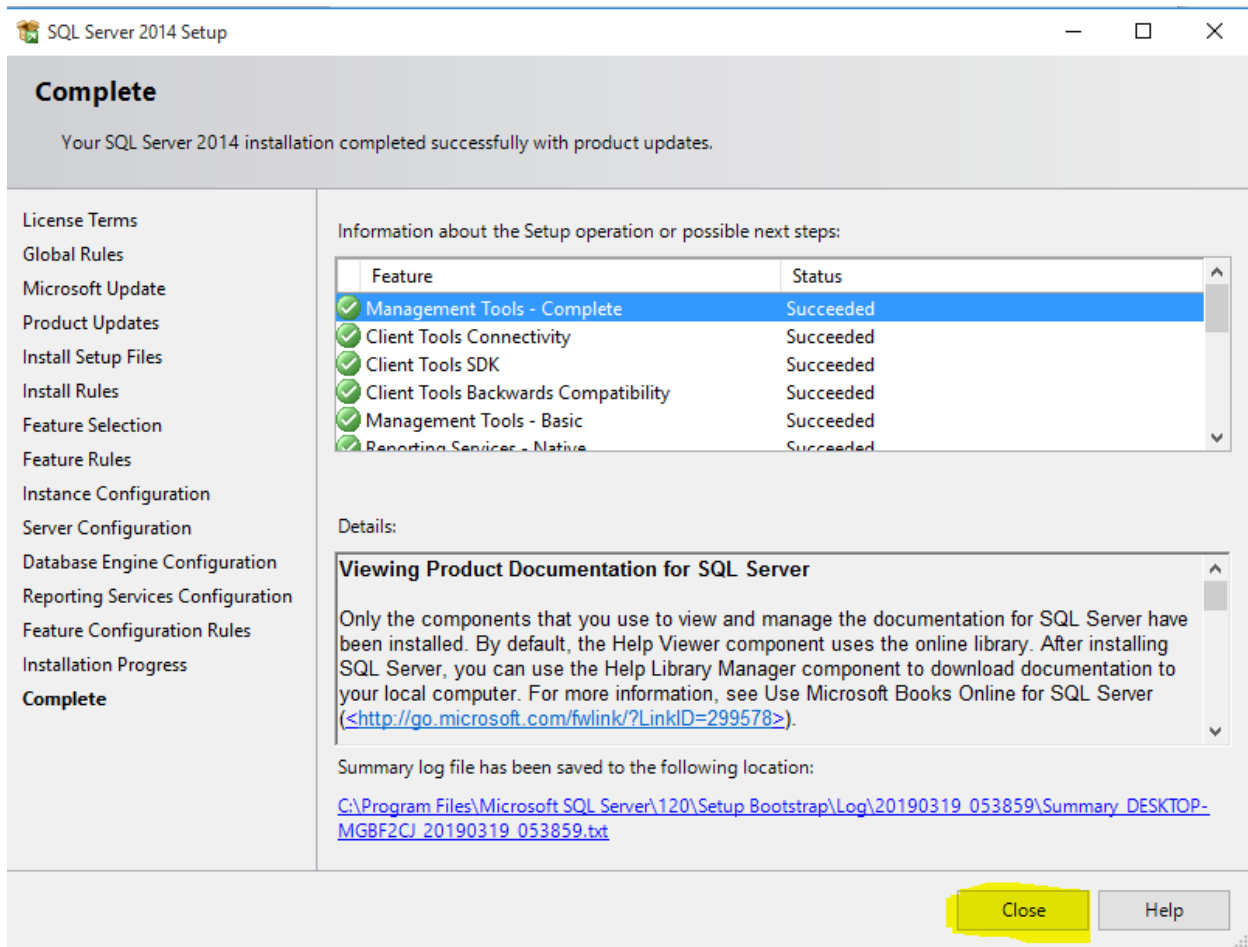


## Step 10:



## Step 11:

- Click **Close** and Your Installation of SQL 2014 is Successfully Completed.

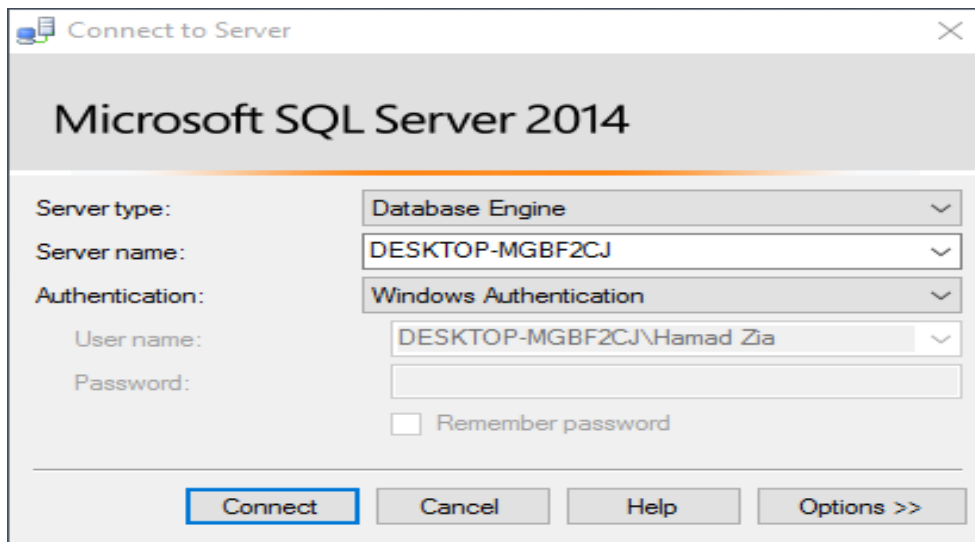


## Lab Task 2:

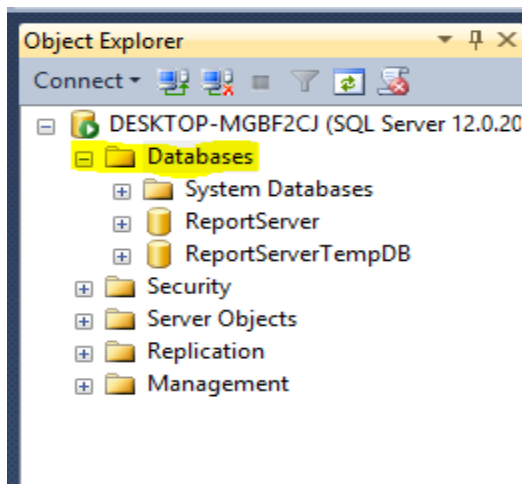
How to Create a Table and insert data & Save it in the Database.

### Code/Steps:

1. Open SQL Server 2014 & Connect Database to Server.

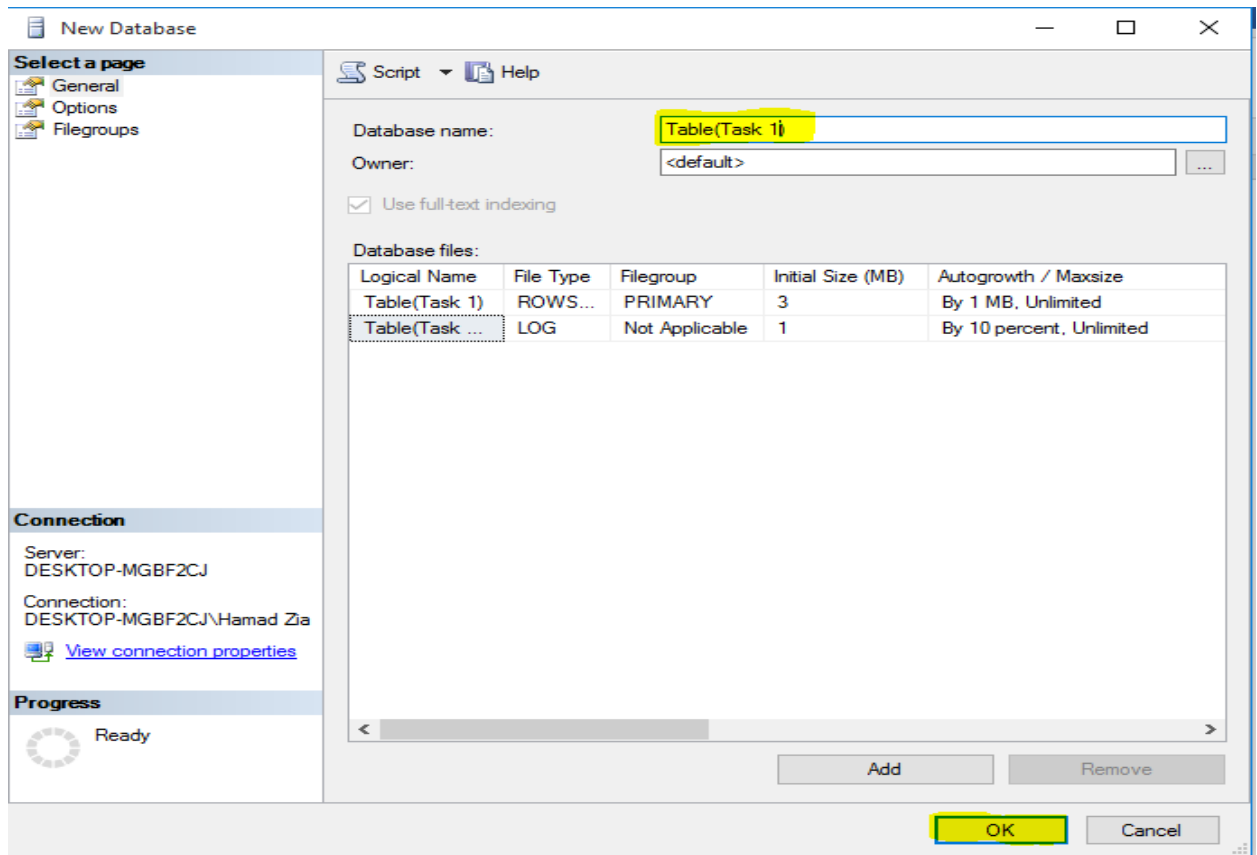


2. First expand **Databases** and right click on **Databases** and click on create **New Database...** in SQL server.

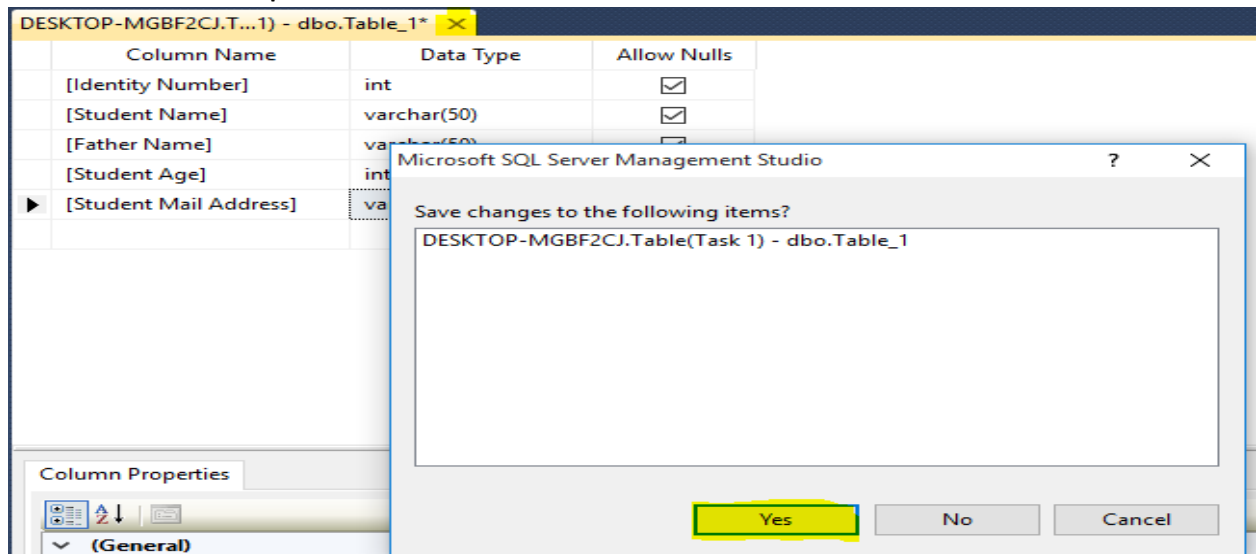




3. New Database box will pop up. Write your database name and click OK.



4. Click on your database name and select tables, Right click on table... And write columns.
5. Click **x** on the top and then click **YES**.



6. Write name for table to save the column's name. The column's name will be saved.

7. Right click on Tables and select refresh for **dbo. Table\_1** to appear.
8. Right click on **dbo. Table\_1** and select **edit top 200 rows**. And write related information. Click **x** on top. The information will automatically save.

DESKTOP-MGBF2CJ.T...1) - dbo.Table_1 ✕					
	Identity Number	Student Name	Father Name	Student Age	Student Mail Address
	1	Hamad Zia	M. Akram Zia	19	hamadzia744@gmail.com
	2	Omer Zaman	Hammad Zaman	19	omerzaman22@gmail.com
	3	M. Huzaifa	Zahoor Ahmad	18	huzaifa441@gmail.com
	4	Abishae Amir	John	19	abishae9@gmail.com
	5	Suban Cheema	Cheema	20	subhan12@gmail.com
	6	Anwer Khan	Muhammad Khan	21	anwer2@hotmail.com
	7	Shah Fahad	Wilayat Shah	20	shah74@gmail.com
▶	8	Kamil Al Yamahi	Ahmad	19	kamilshah2@gmail.com
*	NULL	NULL	NULL	NULL	NULL

9. Right click on **dbo. Table\_1** and click **select top 1000 rows**. After that the result will be shown.

### Code:

```

10. /***** Script for SelectTopNRows command from SSMS *****/
11. SELECT TOP 1000 [Identity Number]
12.      ,[Student Name]
13.      ,[Father Name]
14.      ,[Student Age]
15.      ,[Student Mail Address]
16. FROM [Table(Task 1)].[dbo].[Table_1]

```

## Result:

SQLQuery1.sql - DE...C:\Hamad Zia (58) X

```

/***** Script for SelectTopNRows command from SSMS *****/
SELECT TOP 1000 [Identity Number]
      ,[Student Name]
      ,[Father Name]
      ,[Student Age]
      ,[Student Mail Address]
FROM [Table(Task 1)].[dbo].[Table_1]
  
```

100 %

Results Messages

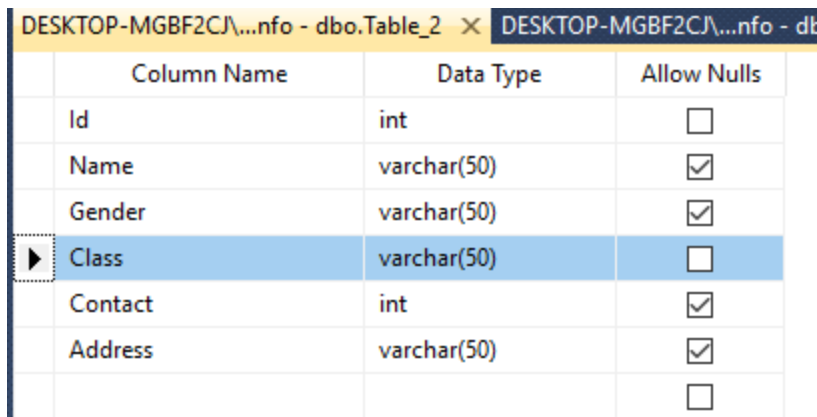
	Identity Number	Student Name	Father Name	Student Age	Student Mail Address
1	1	Hamad Zia	M. Akram Zia	19	hamadzia744@gmail.com
2	2	Omer Zaman	Hammad Zaman	19	omerzaman22@gmail.com
3	3	M. Huzaifa	Zahoor Ahmad	18	huzaifa441@gmail.com
4	4	Abishae Amir	John	19	abishae9@gmail.com
5	5	Suban Cheema	Cheema	20	subhan12@gmail.com
6	6	Anwer Khan	Muhammad Khan	21	anwer2@hotmail.com
7	7	Shah Fahad	Wilayat Shah	20	shah74@gmail.com
8	8	Kamil Al Yamahi	Ahmad	19	kamilshah2@gmail.com

### Lab Task 3:

How to make default value or Binding of column in the Table.

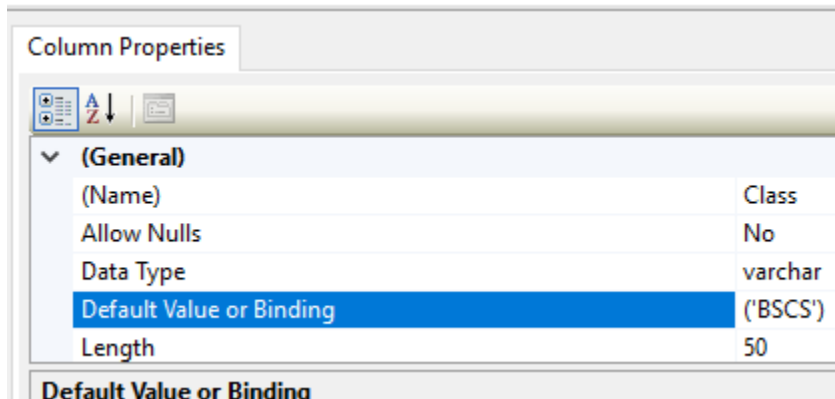
#### Code/Steps:

1. Right click on **dbo. Table\_2** and select **Design**.
2. Click Column Name **Class**.



Column Name	Data Type	Allow Nulls
Id	int	<input type="checkbox"/>
Name	varchar(50)	<input checked="" type="checkbox"/>
Gender	varchar(50)	<input checked="" type="checkbox"/>
Class	varchar(50)	<input type="checkbox"/>
Contact	int	<input checked="" type="checkbox"/>
Address	varchar(50)	<input checked="" type="checkbox"/>
		<input type="checkbox"/>

3. And move the cursor to the bottom of the page and click **default value or Binding** & write the text you want.



Column Properties	
<div> </div>	
<div> <div>(General)</div> <div> <div>(Name)</div> <div>Class</div> </div> <div> <div>Allow Nulls</div> <div>No</div> </div> <div> <div>Data Type</div> <div>varchar</div> </div> <div> <div>Default Value or Binding</div> <div>('BSCS')</div> </div> <div> <div>Length</div> <div>50</div> </div> </div>	
<div>Default Value or Binding</div>	

4. Right click on **dbo. Table\_2** and select **edit top 200 rows**.
5. And next time when you edit the table the default value will automatically written.

How to Delete Data in the Table.

#### Code/Steps:

1. First, click on the row you want to delete.

2. Right click on the arrow signal lies before the First Column & select **Delete**.
3. Your Row will be deleted permanently.

DESKTOP-MGBF2CJ\...nfo - dbo.Table\_2 X

	Id	Name	Gender	Class	Contact	Address
	1	Hamad Zia	male	BSSE	7102	Fujairah
	2	Omer Zaman	male	BSSE	7103	Siqam qam
	3	Huzaifa Zahoor	male	BSSE	7104	Fujairah
	4	Shah Fahad	male	BSSE	8102	Masafi
	7	Anwer Khan	male	BSSE	7204	Dhaid
	8	Subhan Cheema	male	BSSE	2334	Masafi
	9	Kamil Al Yamahi	male	BSSE	8100	Fujairah
	10	Abishae Amir	male	BSCS	8102	Fujairah
▶	13	Naveed Ashraf	male	BSCS	8103	Fujairah
*	NULL	NULL	NULL	NULL	NULL	NULL

## Code:

```

/***** Script for SelectTopNRows command from SSMS *****/
SELECT TOP 1000 [Id]
    ,[Name]
    ,[Gender]
    ,[Class]
    ,[Contact]
    ,[Address]
FROM [Student Info].[dbo].[Table_2]

```

## Result:

SQLQuery1.sql - DE...CJ\Hamad Zia (53) X

```

/***** Script for SelectTopNRows command from SSMS *****/
SELECT TOP 1000 [Id]
    ,[Name]
    ,[Gender]
    ,[Class]
    ,[Contact]
    ,[Address]
FROM [Student Info].[dbo].[Table_2]

```

100 %

Results Messages

	Id	Name	Gender	Class	Contact	Address
1	1	Hamad Zia	male	BSSE	7102	Fujairah
2	2	Omer Zaman	male	BSSE	7103	Siqam qam
3	3	Huzaifa Zahoor	male	BSSE	7104	Fujairah
4	4	Shah Fahad	male	BSSE	8102	Masafi
5	7	Anwer Khan	male	BSSE	7204	Dhaid
6	8	Subhan Cheema	male	BSSE	2334	Masafi
7	9	Kamil Al Yamahi	male	BSSE	8100	Fujairah
8	10	Abishae Amir	male	BSCS	8102	Fujairah
9	13	Naveed Ashraf	male	BSCS	8103	Fujairah

## Lab Task 4:

How to create query-based database of table.

### Code/Steps:

1. Open Microsoft SQL Server 2014 Management Studio.
2. Connect to the Server.
3. Click **New Query** from the top bar or press **Ctrl + N** to open new page.
4. Write **create database Office;** . It's not compulsory to write **;**.

### 5. Write **create table Employees2(**

```
EMPNO int,  
ENAME varchar(20),  
JOB varchar(20),  
MGR varchar(20),  
HIREDATE date,  
SAL int,  
COMM int,  
DEPTNO int,  
)
```

6. select \* from Employees2
7. Insert into Employees2(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)  
values(7369, 'SMITH', 'CLERK', 7902, '17/12/1990', 800, 20)  
Insert into Employees2(EMPNO, ENAME, JOB, MGR, HIREDATE, COMM, SAL, DEPTNO)  
values(7499, 'ALLEN', 'SALESMAN', 7698, '20/02/1981', 1600, 300, 30)  
Insert into Employees2(EMPNO, ENAME, JOB, MGR, HIREDATE, COMM, SAL, DEPTNO)  
values(7521, 'WARD', 'SALESMAN', 7698, '22/02/1981', 1250, 500, 30)  
Insert into Employees2(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)  
values(7566, 'JONES', 'MANAGER', 7839, '02/04/1981', 2975, 30)  
Insert into Employees2(EMPNO, ENAME, JOB, MGR, HIREDATE, COMM, SAL, DEPTNO)  
values(7654, 'MARTIN', 'SALESMAN', 7698, '28/09/1981', 1250, 1400, 30)  
Insert into Employees2(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)  
values(7698, 'BLAKE', 'MANAGER', 7839, '01/05/1981', 2850, 30)  
Insert into Employees2(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)  
values(7782, 'CLARK', 'MANAGER', 7839, '09/06/1981', 2450, 10)  
Insert into Employees2(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)  
values(7788, 'SCOTT', 'ANALYST', 7566, '09/12/1982', 3000, 20)  
Insert into Employees2(EMPNO, ENAME, JOB, HIREDATE, SAL, DEPTNO)  
values(7839, 'KING', 'PRESIDENT', '17/11/1981', 5000, 10)  
Insert into Employees2(EMPNO, ENAME, JOB, MGR, HIREDATE, COMM, SAL, DEPTNO)

```

values(7844, 'TURNER', 'SALESMAN', 7698, '08/09/1981', 1500, 0, 30)
Insert into Employees2(EMPNO, ENAME, MGR, JOB, HIREDATE, SAL, DEPTNO)
values(7876, 'ADAMS', 'CLERK', 7788, '12/01/1983', 1100, 20)
Insert into Employees2(EMPNO, ENAME, MGR, JOB, HIREDATE, SAL, DEPTNO)
values(7900, 'JAMES', 'CLERK', 7698, '03/12/1981', 950, 30)
Insert into Employees2(EMPNO, ENAME, MGR, JOB, HIREDATE, SAL, DEPTNO)
values(7902, 'FORD', 'ANALYST', 7566, '03/12/1981', 3000, 20)
Insert into Employees2(EMPNO, ENAME, MGR, JOB, HIREDATE, SAL, DEPTNO)
values(7900, 'MILLER', 'CLERK', 7782, '23/01/1982', 1300, 10)

```

## Result:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	17/12/1990	800	NULL	20
2	7499	ALLEN	SALESMAN	7698	20/02/1981	1600	300	30
3	7521	WARD	SALESMAN	7698	22/02/1981	1250	500	30
4	7566	JONES	MANAGER	7839	02/04/1981	2975	NULL	20
5	7654	MARTIN	SALESMAN	7698	28/09/1981	1250	1400	30
6	7698	BLAKE	MANAGER	7839	01/05/1981	2850	NULL	30
7	7782	CLARK	MANAGER	7839	09/06/1981	2450	NULL	10
8	7788	SCOTT	ANALYST	7566	09/12/1982	3000	NULL	20
9	7839	KING	PRESIDENT	NULL	17/11/1981	5000	NULL	10
10	7844	TURNER	SALESMAN	7698	08/09/1981	1500	0	30
11	7876	ADAMS	CLERK	7788	12/01/1983	1100	NULL	20
12	7900	JAMES	CLERK	7698	03/12/1981	950	NULL	30
13	7902	FORD	ANALYST	7566	03/12/1981	3000	NULL	20
14	7900	MILLER	CLERK	7782	23/01/1982	1300	NULL	10

## Lab Task 5:

- At insertion time leave some fields empty.
- After addition of all data fill all those fields that are empty.
- Delete some records that have minimum 2.5 CGPA.
- Update records of students that belongs to Islamabad.

## Code/Steps:

1. Open Microsoft SQL Server 2014 Management Studio.

2. Connect to the Server.
3. Click **New Query** from the top bar or press **Ctrl + N** to open new page.
4. Write **create database Class;** . It's not compulsory to write **;**.
5. Write **create table std(**

```

Roll# int identity(6001,1) not null,
Name varchar(20),
[Father Name] varchar(25),
[Date of Birth] date,
Class varchar(4),
[Address] varchar(10),
CGPA float,
)
Select * from std
Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)
values('Hamad', 'Muhammad Akram Zia', '09-21-2019','BSSE','Islamabad',3.95)
Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)
values('Umer', 'Sultan', '09-02-1999','BSSE','Islamabad',3.90)
Insert into std(Name,[Father Name],[Date of Birth],[ Address],CGPA)
values('Rehan', 'Naveed', '09-02-1999', 'Lahore',4.00)
Insert into std(Name,[Father Name],[Date of Birth],[ Address],CGPA)
values('Umar', 'Shahid', '09-02-1999','Lahore',4.00)
Insert into std(Name,[Father Name],[Date of Birth],Class,[ Address],CGPA)
values('Arslan', 'Qadir', '10-01-1999','BSCS','Lahore',3.74)
Insert into std(Name,[Date of Birth],Class,[ Address],CGPA)
values('Talha', '10-01-1999','BSCS','Lahore',3.74)
Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)
values('Saad', 'ullahzain', '10-01-1999','BSCS','Lahore',3.70)
Insert into std(Name,[Father Name],Class,[Address],CGPA)
values('Jamshed', 'Maqbool','BSCS','Faisalabad',3.87)
delete from std where Roll#=6009
Insert into std(Name,[Father Name],Class,[Address],CGPA)
values('Jamshed', 'Maqbool','BSCS','Faisalabad',3.87)
Insert into std(Name,[Father Name],Class,[Address],CGPA)
values('M Umar', 'Liaqat','BSSE','Faisalabad',3.20)
update std set [Date of Birth]='10 -01-1999' where Roll#=6011
update std set [Date of Birth]='10 -01-1997' where Roll#=6010
Insert into std(Name,[Father Name],Class,[Address],CGPA)
values('Noman', 'Ahsan','BSSE','Multan',3.55)
Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)
values('Naveed', 'sultan', '09-21-1998','BSSE','Faisalabad',2.50)

```



delete from std where CGPA=2.50

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Saif', 'ullah', '09-21-1998','BSCS','Faisalabad',2.50)

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Qaiar', 'Mehmood', '09-21-1998','BSCS','Faisalabad',2.50)

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Hafiz Attique', 'Rehman', '09-21-1998','BSCS','Faisalabad',2.90)

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Hussnain', 'Ahmad', '09-21-1999','BSCS','Multan',3.70)

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Adnan', 'Ahmad', '09-21-1999','BSCS','Faisalabad',3.10)

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Ahsan', 'Ahmad', '09-21-1999','BSSE','Faisalabad',3.50)

update std set [Address]='Muree' where [Address]='Islamabad'

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Murad', 'Riaz', '09-21-1999','BSSE','Faisalabad',3.50)

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Shahzaib', 'Aslam', '09-21-1997','BSSE','Multan',3.90)

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Fahad', 'Ghuman', '09-21-1998','BSSE','Multan',3.40)

Insert into std(Name,[Father Name],[Date of Birth],Class,[Address],CGPA)  
values('Awais', 'Bajwa', '09-21-1998','BSSE','Faisalabad',3.40)

## Result:

Results		Messages					
	Roll#	Name	Father Name	Date of Birth	Class	Address	CGPA
1	6001	Hamad	Muhammad Akram Zia	2019-09-21	BSSE	Muree	3.95
2	6002	Umer	Sutan	1999-09-02	BSSE	Muree	3.9
3	6003	Rehan	Naveed	1999-09-02	NULL	Lahore	4
4	6004	Umar	Shahid	1998-02-02	NULL	Lahore	4
5	6005	Umar	Shahid	1998-02-02	NULL	Lahore	4
6	6006	Arslan	Qadir	1999-10-01	BSCS	Lahore	3.74
7	6007	Talha	NULL	1999-10-01	BSCS	Lahore	3.74
8	6008	Saad	ullahzain	1999-10-01	BSCS	Lahore	3.7
9	6010	Jamshed	Maqboo	1997-10-01	BSSE	Faisalabad	3.87
10	6011	M Umar	Liaqat	1999-10-01	BSSE	Faisalabad	3.2
11	6012	Noman	Ahsan	1998-10-05	BSSE	Multan	3.55
12	6016	Hafiz Attique	Rehman	1998-09-21	BSCS	Faisalabad	2.9
13	6017	Hussnain	Ahmad	1999-09-21	BSCS	Multan	3.7
14	6018	Adnan	Ahmad	1999-09-21	BSCS	Faisalabad	3.1
15	6019	Ahsan	Ahmad	1999-09-21	BSSE	Faisalabad	3.5
16	6020	Murad	Riaz	1999-09-21	BSSE	Faisalabad	3.5
17	6021	Murad	Riaz	1999-09-21	BSSE	Faisalabad	3.5
18	6022	Shahzaib	Aslam	1997-09-21	BSSE	Multan	3.9
19	6023	Fahad	Ghuman	1998-09-21	BSSE	Multan	3.4
20	6024	Awais	Bajwa	1998-09-21	BSSE	Faisalabad	3.4

## Lab Task 6:

How to use Aggregates Functions in query-based database of table.

### Code/Steps:

1. Open Microsoft SQL Server 2014 Management Studio.
2. Connect to the Server.
3. Click **New Query** from the top bar or press **Ctrl + N** to open new page.
4. Write **create database Client\_info\_Second;** . It's not compulsory to write ';'.  
 5. Write **create table Employee (**

```
EMPNO int,
ENAME varchar(20),
JOB varchar(20),
MGR  varchar(20),
HIREDATE date,
SAL int,
COMM int,
DEPTNO int,
)
```

```
create database Clients_info_Second; /*Creating Database*/
create table Employee(              /*Creating Table*/
EMPNO int,
ENAME varchar(20),
JOB varchar(20),
MGR  varchar(20),
HIREDATE date,
SAL int,
COMM int,
DEPTNO int,
)
select * from Employee
insert into Employee(EMPNO, ENAME, JOB, HIREDATE, SAL, DEPTNO)
values(7839, 'KING', 'PRESIDENT', '11/17/1981', 5000, 10)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
values(7698, 'BLAKE', 'MANAGER', 7839, '05/01/1981', 2850, 30)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
values(7782, 'CLARK', 'MANAGER', 7839, '06/09/1981', 2450, 10)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
values(7566, 'JONES', 'MANAGER', 7839, '04/02/1981', 2975, 20)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
values(7654, 'MARTIN', 'SALESMAN', 7698, '09/28/1981', 1250, 1400, 30)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
values(7499, 'ALLEN', 'SALESMAN', 7698, '02/20/1981', 1600, 300, 30)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
values(7844, 'TURNER', 'SALESMAN', 7698, '09/08/1981', 1500, 0, 30)
```

```

insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
values(7900, 'JAMES', 'CLERK', 7698, '12/03/1981', 950, 30)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
values(7521, 'WARD', 'SALESMAN', 7698, '02/22/1981', 1250, 500, 30)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
values(7902, 'FORD', 'ANALYST', 7566, '12/03/1981', 3000, 20)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
values(7369, 'SMITH', 'CLERK', 7902, '12/17/1980', 800, 20)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
values(7788, 'SCOTT', 'ANALYST', 7566, '12/09/1982', 3000, 20)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
values(7876, 'ADAMS', 'CLERK', 7788, '01/12/1983', 1100, 20)
insert into Employee(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
values(7934, 'MILLER', 'CLERK', 7782, '01/23/1982', 1300, 10)

```

```

select EMPNO, ENAME, MGR from Employee /*Selecting some record (EMPNO, ENMAE, MGR) all the
employees that working as a 'Clerk'.*/
where JOB='CLERK'

```

	EMPNO	ENAME	MGR
1	7900	JAMES	7698
2	7369	SMITH	7902
3	7934	MILLER	7782

```

select * from Employee
where DEPTNO=10 or DEPTNO=20 --Selecting all employees that have DeptID (10, 20).

```

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7839	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10
2	7782	CLARK	MANAGER	7839	1981-06-09	2450	NULL	10
3	7566	JONES	MANAGER	7839	1981-04-02	2975	NULL	20
4	7902	FORD	ANALYST	7566	1981-12-03	3000	NULL	20
5	7369	SMITH	CLERK	7902	1980-12-17	800	NULL	20
6	7788	SCOTT	ANALYST	7566	1982-12-09	3000	NULL	20
7	7934	MILLER	CLERK	7782	1982-01-23	1300	NULL	10

```

select max(SAL) from Employee --Find the Employee that has maximum and
select min(SAL) from Employee -- minimum salary.

```

	(No column name)
1	5000

	(No column name)
1	800



```
select count(COMM) from Employee --Selecting the employee that
don't have COMM */
```

Results Messages	
employee that don't have COMM	
1	9

```
select ENAME from Employee where COMM=NULL -- and count them.
```

```
select * from Employee order by EMPNO asc --Showing all employees and an
order (Ascending, Descending) with EmpID.
```

	Results	Messages						
	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	1980-12-17	800	NULL	20
2	7499	ALLEN	SALESMAN	7698	1981-02-20	1600	300	30
3	7521	WARD	SALESMAN	7698	1981-02-22	1250	500	30
4	7566	JONES	MANAGER	7839	1981-04-02	2975	NULL	20
5	7654	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	30
6	7698	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30
7	7782	CLARK	MANAGER	7839	1981-06-09	2450	NULL	10
8	7788	SCOTT	ANALYST	7566	1982-12-09	3000	NULL	20
9	7839	KING	PRESIDE...	NU...	1981-11-17	5000	NULL	10
10	7844	TURN...	SALESMAN	7698	1981-09-08	1500	0	30
11	7900	JAMES	CLERK	7698	1981-12-03	950	NULL	30
12	7902	FORD	ANALYST	7566	1981-12-03	3000	NULL	20
13	7934	MILLER	CLERK	7782	1982-01-23	1300	NULL	10

```
select * from Employee order by EMPNO desc
```

Results		Messages						
	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7934	MILLER	CLERK	7782	1982-01-23	1300	NULL	10
2	7902	FORD	ANALYST	7566	1981-12-03	3000	NULL	20
3	7900	JAMES	CLERK	7698	1981-12-03	950	NULL	30
4	7844	TURNER	SALESMAN	7698	1981-09-08	1500	0	30
5	7839	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10
6	7788	SCOTT	ANALYST	7566	1982-12-09	3000	NULL	20
7	7782	CLARK	MANAGER	7839	1981-06-09	2450	NULL	10
8	7698	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30
9	7654	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	30
10	7566	JONES	MANAGER	7839	1981-04-02	2975	NULL	20
11	7521	WARD	SALESMAN	7698	1981-02-22	1250	500	30
12	7499	ALLEN	SALESMAN	7698	1981-02-20	1600	300	30
13	7369	SMITH	CLERK	7902	1980-12-17	800	NULL	20

```
select sum(SAL)+sum(25000) as "President Salary After Bonus" from Employee
where JOB='PRESIDENT'
```

Results Messages	
President Salary After Bonus	
1	30000

## Result:

	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
	7839	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10
	7698	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30
	7782	CLARK	MANAGER	7839	1981-06-09	2450	NULL	10
	7566	JONES	MANAGER	7839	1981-04-02	2975	NULL	20
	7654	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	30
	7499	ALLEN	SALESMAN	7698	1981-02-20	1600	300	30
	7844	TURNER	SALESMAN	7698	1981-09-08	1500	0	30
	7900	JAMES	CLERK	7698	1981-12-03	950	NULL	30
	7521	WARD	SALESMAN	7698	1981-02-22	1250	500	30
	7902	FORD	ANALYST	7566	1981-12-03	3000	NULL	20
	7369	SMITH	CLERK	7902	1980-12-17	800	NULL	20
	7788	SCOTT	ANALYST	7566	1982-12-09	3000	NULL	20
	7934	MILLER	CLERK	7782	1982-01-23	1300	NULL	10
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

## Lab Task 7:

How to use Concatenation in query-based database of table.

### Code/Steps:

1. Open Microsoft SQL Server 2014 Management Studio.
2. Connect to the Server.
3. Click **New Query** from the top bar or press **Ctrl + N** to open new page.

```

create database sales_record          /*Creating Database*/
create table salesreps(              /*Creating Table*/
EMPL_NUM int,
NAME varchar(20),
AGE int,
REP_OFFICE int,
TITLE varchar(20),
HIRE_DATE date,
MANAGER int,
QUOTA nvarchar(30),
SALES nvarchar(30),
EMAIL nvarchar(30),
)
select * from salesreps
insert into salesreps(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE, MANAGER,
QUOTA, SALES, EMAIL)
values(103, 'Paul Cruz', 29, 22, 'Sales
Rep', '11/14/1988', 108, '$27,000.00', '$26,775.00', 'aul@yahoo.com')

```

```
select EMPL_NUM,NAME,TITLE,QUOTA,SALES from salesreps -- Selecting the
EMPL_NUM , NAME, TITLE, QUOTA and SALES from salesReps1 table.
```

	EMPL_NUM	NAME	TITLE	QUOTA	SALES
1	105	Bill Adams	Sales Rep	\$350,000.00	\$367,911.00
2	109	Mary Jones	Sales Rep	\$300,000.00	\$392,725.00
3	102	Sue Smith	Sales Rep	\$350,000.00	\$474,050.00;
4	106	Sam Clark	VP Sales	\$275,000.00	\$299,912.00
5	104	Bob Smith	Sales Mgr	\$200,000.00	\$142,594.00
6	101	Dan Roberts	Sales Rep	\$300,000.00	\$305,673.00
7	110	Tom Snyder	Sales Rep	NULL	\$75,985.00
8	108	Larry Fitch	Sales Mgr	\$350,000.00	\$361,865.00
9	103	Paul Cruz	Sales Rep	\$27,000.00	\$26,775.00
10	107	Nancy Angell	Sales Rep	\$300,000.00	\$186,042.00

```
select *from salesreps where HIRE_DATE>'1-feb-1988' and HIRE_DATE<'1-nov-1990'
-- Selecting All Employees that have Hire_Date in between Feb-1988 to Nov-1990.
```

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL
1	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com
2	109	Mary Jones	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo.com
3	110	Tom Snyder	41	NULL	Sales Rep	1990-01-13	101	NULL	\$75,985.00	tom@yahoo.com
4	108	Larry Fitch	62	21	Sales Mgr	1989-10-12	106	\$350,000.00	\$361,865.00	larry@google.com
5	103	Paul Cruz	29	22	Sales Rep	1988-11-14	108	\$27,000.00	\$26,775.00	aul@yahoo.com
6	107	Nancy Angell	49	22	Sales Rep	1988-11-14	108	\$300,000.00	\$186,042.00	nancy@google.com

```
select *from salesreps where MANAGER in(104,108,101) --Selecting all Employees
that have Manager ID 104,108,101 without using OR Operator.
```

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL
1	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com
2	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00;	sue@google.com
3	101	Dan Roberts	45	12	Sales Rep	1986-10-20	104	\$300,000.00	\$305,673.00	dan@facebook.com
4	110	Tom Snyder	41	NULL	Sales Rep	1990-01-13	101	NULL	\$75,985.00	tom@yahoo.com
5	103	Paul Cruz	29	22	Sales Rep	1988-11-14	108	\$27,000.00	\$26,775.00	aul@yahoo.com
6	107	Nancy Angell	49	22	Sales Rep	1988-11-14	108	\$300,000.00	\$186,042.00	nancy@google.com

```
select *from salesreps where NAME like('%ch') --Selecting All Employees that
have 'CH' as Last Character in Name.
```

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL
1	108	Larry Fitch	62	21	Sales Mgr	1989-10-12	106	\$350,000.00	\$361,865.00	larry@google.com

```
select EMPL_NUM,NAME,AGE,TITLE from salesreps where NAME like('_a%') --Selecting
Empl_Num, Name, Age, and Title of employees that have 'A' as Second Character in
their name from SalesReps table
```

	EMPL_NUM	NAME	AGE	TITLE
1	109	Mary Jones	31	Sales Rep
2	106	Sam Clark	52	VP Sales
3	101	Dan Roberts	45	Sales Rep
4	108	Larry Fitch	62	Sales Mgr
5	103	Paul Cruz	29	Sales Rep
6	107	Nancy Angell	49	Sales Rep

```
select *from salesreps where EMAIL like('%yahoo.com%') --Selecting All Employees
that have Email Address on Yahoo mail Server.
```

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL
1	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com
2	109	Mary Jones	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo.com
3	110	Tom Snyder	41	NULL	Sales Rep	1990-01-13	101	NULL	\$75,985.00	tom@yahoo.com
4	103	Paul Cruz	29	22	Sales Rep	1988-11-14	108	\$27,000.00	\$26,775.00	aul@yahoo.com

```

select 'STATEMENT'=CONCAT(EMPL_NUM,' Working as a ',TITLE,' SINCE FROM
',HIRE_DATE,' WITH ',QUOTA,' WITH ',NAME) FROM salesreps
/*Create a Statement from given table as
"Empl_Num Working as a Job Title Since form Hire_Date with Quota" with field name
Employee Statement. */

```

	STATEMENT
1	105 Working as a Sales Rep SINCE FROM 1988-02-12 ...
2	109 Working as a Sales Rep SINCE FROM 1989-10-12 ...
3	102 Working as a Sales Rep SINCE FROM 1986-12-10 ...
4	106 Working as a VP Sales SINCE FROM 1988-01-14 ...
5	104 Working as a Sales Mgr SINCE FROM 1987-05-19 ...
6	101 Working as a Sales Rep SINCE FROM 1986-10-20 ...
7	110 Working as a Sales Rep SINCE FROM 1990-01-13 ...
8	108 Working as a Sales Mgr SINCE FROM 1989-10-12 ...
9	103 Working as a Sales Rep SINCE FROM 1988-11-14 ...
10	107 Working as a Sales Rep SINCE FROM 1988-11-14 ...

```

select 'REMAINING SALES'=CONCAT('REMAINING SALES OF EMPLOYEE ',SALES) FROM
salesreps --Select the remaining Sales of employee after Quota Achievement. Label
remaining field as 'Remaining Sales'.

```

	REMAINING SALES
1	REMAINING SALES OF EMPLOYEE \$367,911.00
2	REMAINING SALES OF EMPLOYEE \$392,725.00
3	REMAINING SALES OF EMPLOYEE \$474,050.00;
4	REMAINING SALES OF EMPLOYEE \$299,912.00
5	REMAINING SALES OF EMPLOYEE \$142,594.00
6	REMAINING SALES OF EMPLOYEE \$305,673.00
7	REMAINING SALES OF EMPLOYEE \$75,985.00
8	REMAINING SALES OF EMPLOYEE \$361,865.00
9	REMAINING SALES OF EMPLOYEE \$26,775.00
10	REMAINING SALES OF EMPLOYEE \$186,042.00

```

select *from salesreps order by 'EMPL_NUM' ASC
select *from salesreps order by 'EMPL_NUM' DESC
--Showing all employees and an order (Ascending, Descending) with Empl_num.

```



**Result:**

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL
1	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com
2	109	Mary Jones	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo.com
3	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@google.com
4	106	Sam Clark	52	11	VP Sales	1988-01-14	NULL	\$275,000.00	\$299,912.00	sam@facebook.com
5	104	Bob Smith	33	12	Sales Mgr	1987-05-19	106	\$200,000.00	\$142,594.00	bob@facebook.com
6	101	Dan Roberts	45	12	Sales Rep	1986-10-20	104	\$300,000.00	\$305,673.00	dan@facebook.com
7	110	Tom Snyder	41	NULL	Sales Rep	1990-01-13	101	NULL	\$75,985.00	tom@yahoo.com
8	108	Lary Fitch	62	21	Sales Mgr	1989-10-12	106	\$350,000.00	\$361,865.00	lary@google.com
9	103	Paul Cruz	29	22	Sales Rep	1988-11-14	108	\$27,000.00	\$26,775.00	aul@yahoo.com
10	107	Nancy Angell	49	22	Sales Rep	1988-11-14	108	\$300,000.00	\$186,042.00	nancy@google.com

```

-----Method of Conctination-----
select CONCAT(ENAME,' is Our Department ',JOB) from employees1

-----Method No # 01-----
select CONCAT(ENAME,' is Our Department ',JOB) 'Full Description' from
employees1

-----Method No #02-----
select CONCAT(ENAME,' is Our Department ',JOB) as 'Full Description'
from employees1

-----Method No # 03---Assigning ----
select 'Full Description'=CONCAT(ENAME,' is Our Department ',JOB) from
employees1
-----End of Conctination-----

```

**Lab Task 8:**

How to use Cartesian Product & Primary Key in query-based database of table.

**Code/Steps:**

1. Open Microsoft SQL Server 2014 Management Studio.
2. Connect to the Server.
3. Click **New Query** from the top bar or press **Ctrl + N** to open new page.
4. `create database Employee12; /*Creating Database*/`
5. `create table Employees12( /*Creating Table No 1*/`
6. `EMPNO int,`
7. `ENAME varchar(20),`
8. `JOB varchar(20),`
9. `MGR varchar(20),`
10. `HIREDATE date,`

```

11. SAL int,
12. COMM int,
13. DEPTNO int,
14. primary key(empno)
15. )
16. select * from employees12
17. insert into Employees12(EMPNO, ENAME, JOB, HIREDATE, SAL, DEPTNO)
18. values(5, 'KING', 'PRESIDENT', '11/17/1981', 5000, 10)
19. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
20. values(4, 'BLAKE', 'MANAGER', 7839, '05/01/1981', 2850, 30)
21. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
22. values(8, 'CLARK', 'MANAGER', 7839, '06/09/1981', 2450, 40)
23. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
24. values(7, 'JONES', 'MANAGER', 7839, '04/02/1981', 2975, 50)
25. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
26. values(9, 'MARTIN', 'SALESMAN', 7698, '09/28/1981', 1250, 1400, 60)
27. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
28. values(11, 'ALLEN', 'SALESMAN', 7698, '02/20/1981', 1600, 300, 75)
29. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
30. values(10, 'TURNER', 'SALESMAN', 7698, '09/08/1981', 1500, 0, 76)
31. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
32. values(0, 'JAMES', 'CLERK', 7698, '12/03/1981', 950, 77)
33. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
34. values(12, 'WARD', 'SALESMAN', 7698, '02/22/1981', 1250, 500, 90)
35. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
36. values(32, 'FORD', 'ANALYST', 7566, '12/03/1981', 3000, 100)
37. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
38. values(20, 'SMITH', 'CLERK', 7902, '12/17/1980', 800, 105)
39. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
40. values(18, 'SCOTT', 'ANALYST', 7566, '12/09/1982', 3000, 110)
41. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
42. values(16, 'ADAMS', 'CLERK', 7788, '01/12/1983', 1100, 115)
43. insert into Employees12(EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
44. values(19, 'MILLER', 'CLERK', 7782, '01/23/1982', 1300, 120)
45.
46.
47. --Creating another table
48.
49. create table salesrepss12(                               /*Creating Table*/
50. EMPL_NUM int,
51. NAME varchar(20),
52. AGE int,
53. REP_OFFICE int,
54. TITLE varchar(20),
55. HIRE_DATE date,
56. MANAGER int,
57. QUOTA nvarchar(30),
58. SALES nvarchar(30),
59. EMAIL nvarchar(30),
60. rollno int identity(10,1)
61. )
62. select * from salesrepss12
63. insert into salesrepss12(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE,
    MANAGER, QUOTA, SALES, EMAIL)
64. values(105, 'Bill Adams', 37, 13, 'Sales
    Rep', '2/12/1988', 104, '$350,000.00', '$367,911.00', 'bill@yahoo.com')
65. insert into salesrepss12(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE,
    MANAGER, QUOTA, SALES, EMAIL)

```

```

66. values(109, 'Mary Jones', 31, 11, 'Sales
    Rep', '10/12/1989', 106, '$300,000.00', '$392,725.00', 'mary@yahoo.com')
67. insert into salesrepss12(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE,
    MANAGER, QUOTA, SALES, EMAIL)
68. values(102, 'Sue Smith', 48, 21, 'Sales
    Rep', '12/10/1986', 108, '$350,000.00', '$474,050.00;', 'sue@google.com')
69. insert into salesrepss12(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE, QUOTA,
    SALES, EMAIL)
70. values(106, 'Sam Clark', 52, 11, 'VP
    Sales', '01/14/1988', '$275,000.00', '$299,912.00', 'sam@facebook.com')
71. insert into salesrepss12(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE,
    MANAGER, QUOTA, SALES, EMAIL)
72. values(104, 'Bob Smith', 33, 12, 'Sales
    Mgr', '05/19/1987', 106, '$200,000.00', '$142,594.00', 'bob@facebook.com')
73. insert into salesrepss12(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE,
    MANAGER, QUOTA, SALES, EMAIL)
74. values(101, 'Dan Roberts', 45, 12, 'Sales
    Rep', '10/20/1986', 104, '$300,000.00', '$305,673.00', 'dan@facebook.com')
75. insert into salesrepss12(EMPL_NUM, NAME, AGE, TITLE, HIRE_DATE, MANAGER, SALES,
    EMAIL)
76. values(110, 'Tom Snyder', 41, 'Sales
    Rep', '01/13/1990', 101, '$75,985.00', 'tom@yahoo.com')
77. insert into salesrepss12(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE,
    MANAGER, QUOTA, SALES, EMAIL)
78. values(108, 'Larry Fitch', 62, 21, 'Sales
    Mgr', '10/12/1989', 106, '$350,000.00', '$361,865.00', 'larry@google.com')
79. insert into salesrepss12(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE,
    MANAGER, QUOTA, SALES, EMAIL)
80. values(103, 'Paul Cruz', 29, 22, 'Sales
    Rep', '11/14/1988', 108, '$27,000.00', '$26,775.00', 'aul@yahoo.com')
81. insert into salesrepss12(EMPL_NUM, NAME, AGE, REP_OFFICE, TITLE, HIRE_DATE,
    MANAGER, QUOTA, SALES, EMAIL)
82. values(107, 'Nancy Angell', 49, 22, 'Sales
    Rep', '11/14/1988', 108, '$300,000.00', '$186,042.00', 'nancy@google.com')
83.
84.
85. select EMPL_NUM, NAME, TITLE, QUOTA, SALES from salesrepss12          -- Selecting the
    EMPL_NUM , NAME, TITLE, QUOTA and SALES from salesReps1 table.

```

	EMPL_NUM	NAME	TITLE	QUOTA	SALES
1	105	Bill Adams	Sales Rep	\$350,000.00	\$367,911.00
2	109	Mary Jones	Sales Rep	\$300,000.00	\$392,725.00
3	102	Sue Smith	Sales Rep	\$350,000.00	\$474,050.00;
4	106	Sam Clark	VP Sales	\$275,000.00	\$299,912.00
5	104	Bob Smith	Sales Mgr	\$200,000.00	\$142,594.00
6	101	Dan Roberts	Sales Rep	\$300,000.00	\$305,673.00
7	110	Tom Snyder	Sales Rep	NULL	\$75,985.00
8	108	Larry Fitch	Sales Mgr	\$350,000.00	\$361,865.00
9	103	Paul Cruz	Sales Rep	\$27,000.00	\$26,775.00
10	107	Nancy Angell	Sales Rep	\$300,000.00	\$186,042.00

86. `select *from salesrepss12 where HIRE_DATE>'1-feb-1988' and HIRE_DATE<'1-nov-1990'`  
 -- Selecting All Employees that have Hire\_Date in between Feb-1988 to Nov-1990.

Results Messages

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL	rollno
1	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10
2	109	Mary Jones	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo.com	11
3	110	Tom Snyder	41	NULL	Sales Rep	1990-01-13	101	NULL	\$75,985.00	tom@yahoo.com	16
4	108	Larry Fitch	62	21	Sales Mgr	1989-10-12	106	\$350,000.00	\$361,865.00	larry@google.com	17
5	103	Paul Cruz	29	22	Sales Rep	1988-11-14	108	\$27,000.00	\$26,775.00	aul@yahoo.com	18
6	107	Nancy Angell	49	22	Sales Rep	1988-11-14	108	\$300,000.00	\$186,042.00	nancy@google.com	19

87. `select *from salesrepss12 where MANAGER in(104,108,101)` --Selecting all Employees that have Manager ID 104,108,101 without using OR Operator.

Results Messages

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL	rollno
1	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10
2	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@google.com	12
3	101	Dan Roberts	45	12	Sales Rep	1986-10-20	104	\$300,000.00	\$305,673.00	dan@facebook.com	15
4	110	Tom Snyder	41	NULL	Sales Rep	1990-01-13	101	NULL	\$75,985.00	tom@yahoo.com	16
5	103	Paul Cruz	29	22	Sales Rep	1988-11-14	108	\$27,000.00	\$26,775.00	aul@yahoo.com	18
6	107	Nancy Angell	49	22	Sales Rep	1988-11-14	108	\$300,000.00	\$186,042.00	nancy@google.com	19

88. `select *from salesrepss12 where NAME like('%ch')` --Selecting All Employees that have 'CH' as Last Character in Name.

Results Messages

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL	rollno
1	108	Larry Fitch	62	21	Sales Mgr	1989-10-12	106	\$350,000.00	\$361,865.00	larry@google.com	17

89. `select EMPL_NUM,NAME,AGE,TITLE from salesrepss12 where NAME like('_a%')` -- Selecting Empl\_Num, Name, Age, and Title of employees that have 'A' as Second Character in their name from SalesReps table

Results

Messages

	EMPL_NUM	NAME	AGE	TITLE
1	109	Mary Jones	31	Sales Rep
2	106	Sam Clark	52	VP Sales
3	101	Dan Roberts	45	Sales Rep
4	108	Larry Fitch	62	Sales Mgr
5	103	Paul Cruz	29	Sales Rep
6	107	Nancy Angell	49	Sales Rep

90. `select *from salesrepss12 where EMAIL like('%yahoo.com%')` --Selecting All Employees that have Email Address on Yahoo mail Server.

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL	rollno
1	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10
2	109	Mary Jones	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo.com	11
3	110	Tom Snyder	41	NULL	Sales Rep	1990-01-13	101	NULL	\$75,985.00	tom@yahoo.com	16
4	103	Paul Cruz	29	22	Sales Rep	1988-11-14	108	\$27,000.00	\$26,775.00	aul@yahoo.com	18

91. `select 'STATEMENT'=CONCAT(EMPL_NUM,' Working as a ',TITLE,' SINCE FROM  
' ,HIRE_DATE,' WITH ',QUOTA,' WITH ',NAME) FROM salesrepss12`
92. `/*Create a Statement from given table as`
93. `“Empl_Num Working as a Job Title Since form Hire_Date with Quota” with field name  
Employee Statement. */`

	STATEMENT
1	105 Working as a Sales Rep SINCE FROM 1988-02-12 ...
2	109 Working as a Sales Rep SINCE FROM 1989-10-12 ...
3	102 Working as a Sales Rep SINCE FROM 1986-12-10 ...
4	106 Working as a VP Sales SINCE FROM 1988-01-14 ...
5	104 Working as a Sales Mgr SINCE FROM 1987-05-19 ...
6	101 Working as a Sales Rep SINCE FROM 1986-10-20 ...
7	110 Working as a Sales Rep SINCE FROM 1990-01-13 ...
8	108 Working as a Sales Mgr SINCE FROM 1989-10-12 ...
9	103 Working as a Sales Rep SINCE FROM 1988-11-14 ...
10	107 Working as a Sales Rep SINCE FROM 1988-11-14 ...

94. `select 'REMAINING SALES'=CONCAT('REMAINING SALES OF EMPLOYEE',SALES) FROM  
salesrepss12 --Select the remaining Sales of employee after Quota Achievement.  
Label remaining field as 'Remaining Sales'.`

	REMAINING SALES
1	REMAINING SALES OF EMPLOYEE \$367,911.00
2	REMAINING SALES OF EMPLOYEE \$392,725.00
3	REMAINING SALES OF EMPLOYEE \$474,050.00;
4	REMAINING SALES OF EMPLOYEE \$299,912.00
5	REMAINING SALES OF EMPLOYEE \$142,594.00
6	REMAINING SALES OF EMPLOYEE \$305,673.00
7	REMAINING SALES OF EMPLOYEE \$75,985.00
8	REMAINING SALES OF EMPLOYEE \$361,865.00
9	REMAINING SALES OF EMPLOYEE \$26,775.00
10	REMAINING SALES OF EMPLOYEE \$186,042.00

95. `select *from salesrepss12 order by 'EMPL_NUM' ASC`

Results Messages											
	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL	rollno
1	101	Dan Roberts	45	12	Sales Rep	1986-10-20	104	\$300,000.00	\$305,673.00	dan@facebook.com	15
2	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@google.com	12
3	103	Paul Cruz	29	22	Sales Rep	1988-11-14	108	\$27,000.00	\$26,775.00	aul@yahoo.com	18
4	104	Bob Smith	33	12	Sales Mgr	1987-05-19	106	\$200,000.00	\$142,594.00	bob@facebook.com	14
5	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10
6	106	Sam Clark	52	11	VP Sales	1988-01-14	NULL	\$275,000.00	\$299,912.00	sam@facebook.com	13
7	107	Nancy Angell	49	22	Sales Rep	1988-11-14	108	\$300,000.00	\$186,042.00	nancy@google.com	19
8	108	Larry Fitch	62	21	Sales Mgr	1989-10-12	106	\$350,000.00	\$361,865.00	larry@google.com	17
9	109	Mary Jones	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo.com	11
10	110	Tom Snyder	41	NULL	Sales Rep	1990-01-13	101	NULL	\$75,985.00	tom@yahoo.com	16

96. `select *from salesrepss12 order by 'EMPL_NUM' DESC`

97. `--Showing all employees and an order (Ascending, Descending) with EmpI_num.`

Results Messages											
	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL	rollno
1	110	Tom Snyder	41	NULL	Sales Rep	1990-01-13	101	NULL	\$75,985.00	tom@yahoo.com	16
2	109	Mary Jones	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo.com	11
3	108	Larry Fitch	62	21	Sales Mgr	1989-10-12	106	\$350,000.00	\$361,865.00	larry@google.com	17
4	107	Nancy Angell	49	22	Sales Rep	1988-11-14	108	\$300,000.00	\$186,042.00	nancy@google.com	19
5	106	Sam Clark	52	11	VP Sales	1988-01-14	NULL	\$275,000.00	\$299,912.00	sam@facebook.com	13
6	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10
7	104	Bob Smith	33	12	Sales Mgr	1987-05-19	106	\$200,000.00	\$142,594.00	bob@facebook.com	14
8	103	Paul Cruz	29	22	Sales Rep	1988-11-14	108	\$27,000.00	\$26,775.00	aul@yahoo.com	18
9	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@google.com	12
10	101	Dan Roberts	45	12	Sales Rep	1986-10-20	104	\$300,000.00	\$305,673.00	dan@facebook.com	15

98. `select count(*)from salesrepss12, Employees12` `--Count both table's field`

Results Messages	
	(No column name)
1	140



```
select * from salesrepss12, Employees12 --Cartiesian Product
```

	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL	rolno	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	0	JAMES	CLERK	7698	1981-12-03	950	NULL	77
2	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	4	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30
3	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	5	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10
4	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	7	JONES	MANAGER	7839	1981-04-02	2975	NULL	50
5	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	8	CLARK	MANAGER	7839	1981-06-09	2450	NULL	40
6	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	9	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	60
7	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	10	TURNER	SALESMAN	7698	1981-09-08	1500	0	76
8	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	11	ALLEN	SALESMAN	7698	1981-02-20	1600	300	75
9	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	12	WARD	SALESMAN	7698	1981-02-22	1250	500	90
10	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	16	ADAMS	CLERK	7788	1983-01-12	1100	NULL	115
11	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	18	SCOTT	ANALYST	7566	1982-12-09	3000	NULL	110
12	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	19	MILLER	CLERK	7782	1982-01-23	1300	NULL	120
13	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	20	SMITH	CLERK	7902	1980-12-17	800	NULL	105
14	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	32	FORD	ANALYST	7566	1981-12-03	3000	NULL	100
15	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	0	JAMES	CLERK	7698	1981-12-03	950	NULL	77
16	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	4	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30
17	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	5	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10
18	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	7	JONES	MANAGER	7839	1981-04-02	2975	NULL	50
19	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	8	CLARK	MANAGER	7839	1981-06-09	2450	NULL	40
20	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	9	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	60
21	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	10	TURNER	SALESMAN	7698	1981-09-08	1500	0	76
22	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	11	ALLEN	SALESMAN	7698	1981-02-20	1600	300	75
23	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	12	WARD	SALESMAN	7698	1981-02-22	1250	500	90
24	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	16	ADAMS	CLERK	7788	1983-01-12	1100	NULL	115
25	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	18	SCOTT	ANALYST	7566	1982-12-09	3000	NULL	110
26	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	19	MILLER	CLERK	7782	1982-01-23	1300	NULL	120
27	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	20	SMITH	CLERK	7902	1980-12-17	800	NULL	105
28	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	32	FORD	ANALYST	7566	1981-12-03	3000	NULL	100
29	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@google....	12	0	JAMES	CLERK	7698	1981-12-03	950	NULL	77
30	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@google....	12	4	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30
31	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@noodle....	12	5	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10

```
99. select *FROM salesrepss12 s, Employees12 e
100.      where s.NAME=e.ENAME
101.
102.      select sum(age) as "Total Age" from salesrepss12, Employees12
```

	Total Age
1	5978

## Result:

Results		Messages																		
	EMPL_NUM	NAME	AGE	REP_OFFICE	TITLE	HIRE_DATE	MANAGER	QUOTA	SALES	EMAIL	rollno	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO	
1	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	0	JAMES	CLERK	7698	1981-12-03	950	NULL	77	
2	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	4	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30	
3	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	5	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10	
4	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	7	JONES	MANAGER	7839	1981-04-02	2975	NULL	50	
5	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	8	CLARK	MANAGER	7839	1981-06-09	2450	NULL	40	
6	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	9	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	60	
7	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	10	TURNER	SALESMAN	7698	1981-09-08	1500	0	76	
8	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	11	ALLEN	SALESMAN	7698	1981-02-20	1600	300	75	
9	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	12	WARD	SALESMAN	7698	1981-02-22	1250	500	90	
10	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	16	ADAMS	CLERK	7788	1983-01-12	1100	NULL	115	
11	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	18	SCOTT	ANALYST	7566	1982-12-09	3000	NULL	110	
12	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	19	MILLER	CLERK	7782	1982-01-23	1300	NULL	120	
13	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	20	SMITH	CLERK	7902	1980-12-17	800	NULL	105	
14	105	Bill Adams	37	13	Sales Rep	1988-02-12	104	\$350,000.00	\$367,911.00	bill@yahoo.com	10	32	FORD	ANALYST	7566	1981-12-03	3000	NULL	100	
15	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	0	JAMES	CLERK	7698	1981-12-03	950	NULL	77	
16	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	4	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30	
17	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	5	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10	
18	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	7	JONES	MANAGER	7839	1981-04-02	2975	NULL	50	
19	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	8	CLARK	MANAGER	7839	1981-06-09	2450	NULL	40	
20	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	9	MARTIN	SALESMAN	7698	1981-09-28	1250	1400	60	
21	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	10	TURNER	SALESMAN	7698	1981-09-08	1500	0	76	
22	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	11	ALLEN	SALESMAN	7698	1981-02-20	1600	300	75	
23	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	12	WARD	SALESMAN	7698	1981-02-22	1250	500	90	
24	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	16	ADAMS	CLERK	7788	1983-01-12	1100	NULL	115	
25	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	18	SCOTT	ANALYST	7566	1982-12-09	3000	NULL	110	
26	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	19	MILLER	CLERK	7782	1982-01-23	1300	NULL	120	
27	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	20	SMITH	CLERK	7902	1980-12-17	800	NULL	105	
28	109	Mary Jo...	31	11	Sales Rep	1989-10-12	106	\$300,000.00	\$392,725.00	mary@yahoo....	11	32	FORD	ANALYST	7566	1981-12-03	3000	NULL	100	
29	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@google....	12	0	JAMES	CLERK	7698	1981-12-03	950	NULL	77	
30	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@google....	12	4	BLAKE	MANAGER	7839	1981-05-01	2850	NULL	30	
31	102	Sue Smith	48	21	Sales Rep	1986-12-10	108	\$350,000.00	\$474,050.00	sue@noodle....	12	5	KING	PRESIDENT	NULL	1981-11-17	5000	NULL	10	

## Lab Task 9:

How to use Relations (Primary Key & Foreign Key) in query-based database of table.

### Code/Steps:

1. Open Microsoft SQL Server 2014 Management Studio.
2. Connect to the Server.
3. Click **New Query** from the top bar or press **Ctrl + N** to open new page.
4. `create database basetable`
5. `create table branch(`



```

6. branchNo nvarchar(8) primary key,
7. street nvarchar(20),
8. city varchar(10),
9. postcode nvarchar(10)
10.)
11. select * from branch
12. insert into branch(branchNo,street,city,postcode)
13. values('B005','22 Deer Rd','London','SW14EH')
14. insert into branch(branchNo,street,city,postcode)
15. values('B007','16 Argyll St','Aberdeen','AB23SU')
16. insert into branch(branchNo,street,city,postcode)
17. values('B003','163 Main St','Glasgo','G119QX')
18. insert into branch(branchNo,street,city,postcode)
19. values('B004','32 Manse Rd','Bristol','B5991NZ')
20. insert into branch(branchNo,street,city,postcode)
21. values('B002','56 Clover Dr','London','NW106EU')

```

Results		Messages		
	Branch_Code	Branch_Name	Branch_City	assets
1	BR-105	Dubai Islamic Bank Five	Peshawar	AS-1
2	BR-104	Dubai Islamic Bank Four	Multan	AS-4
3	BR-101	Dubai Islamic Bank One	Faisalabad	AS-5
4	BR-107	Dubai Islamic Bank Seven	Karachi	AS-7
5	BR-106	Dubai Islamic Bank Six	Kohat	AS-6
6	BR-103	Dubai Islamic Bank Three	Lahore	AS-3
7	BR-102	Dubai Islamic Bank Two	Islamabad	AS-2

```

22. create table staffthree(
23. staffNo nvarchar(8) primary key,
24. fName varchar(8),
25. lName varchar(8),
26. position varchar(20),
27. sex varchar(1),
28. DOB date,
29. salary int,
30. branchNo nvarchar(8) foreign key references branch(branchNo)
31.)
32. select * from staffthree
33. insert into staffthree(staffNo,fName,lName,position,sex,DOB,salary,branchNo)
34. values('SL21','John','White','Manager','M','10-1-45',30000,'B005')
35. insert into staffthree(staffNo,fName,lName,position,sex,DOB,salary,branchNo)
36. values('SG37','Ann','Beech','Assist.','F','11-10-60',12000,'B003')
37. insert into staffthree(staffNo,fName,lName,position,sex,DOB,salary,branchNo)
38. values('SG14','David','Ford','Supervisor','M','03-24-58',18000,'B003')
39. insert into staffthree(staffNo,fName,lName,position,sex,DOB,salary,branchNo)
40. values('SA9','Mary','Howe','Assistant','F','02-19-70',9000,'B007')
41. insert into staffthree(staffNo,fName,lName,position,sex,DOB,salary,branchNo)
42. values('SG5','Susan','Brand','Manager','F','01-03-40',24000,'B003')
43. insert into staffthree(staffNo,fName,lName,position,sex,DOB,salary,branchNo)
44. values('SL41','Julie','Lee','Assistant','F','06-13-65',9000,'B005')

```

```

45. create table PropertyForRent(
46. propertyNo nvarchar(8) primary key,
47. street nvarchar(20),
48. city varchar(10),
49. postcode nvarchar(10),
50. [type] varchar(10),
51. rooms int,
52. rent int,
53. ownerNo nvarchar(8),
54. staffNo nvarchar(8) foreign key references staffthree(staffNo),
55. branchNo nvarchar(8) foreign key references branch(branchNo)
56. )
57. select * from PropertyForRent
58. insert into
    PropertyForRent(propertyNo, street, city, postcode, [type], rooms, rent, ownerNo, staffNo,
    branchNo)
59. values('PA14', '16 Holhead', 'Aberdeen', 'AB755U', 'House', 6, 650, 'C046', 'SA9', 'B007')
60. insert into
    PropertyForRent(propertyNo, street, city, postcode, [type], rooms, rent, ownerNo, staffNo,
    branchNo)
61. values('PL94', '6 Argyll St', 'London', 'NW2', 'Flat', 4, 400, 'C087', 'SL41', 'B005')
62. insert into
    PropertyForRent(propertyNo, street, city, postcode, [type], rooms, rent, ownerNo, branchNo
    )
63. values('PG4', '6 Lawrence St', 'Glasgow', 'G119QX', 'Flat', 3, 350, 'C040', 'B003')
64. insert into
    PropertyForRent(propertyNo, street, city, postcode, [type], rooms, rent, ownerNo, staffNo,
    branchNo)
65. values('PG36', '2 Manor Rd', 'Glasgow', 'G324QX', 'flat', 3, 375, 'C093', 'SG37', 'B003')
66. insert into
    PropertyForRent(propertyNo, street, city, postcode, [type], rooms, rent, ownerNo, staffNo,
    branchNo)
67. values('PG21', '18 Dale Rd', 'Glasgow', 'G12', 'House', 5, 600, 'C087', 'SG37', 'B003')
68. insert into
    PropertyForRent(propertyNo, street, city, postcode, [type], rooms, rent, ownerNo, staffNo,
    branchNo)
69. values('PG16', '5 Novar Dr', 'Glasgow', 'G129AX', 'Flat', 4, 450, 'C093', 'SG14', 'B003')
70.
71. create table Clientone(
72. clientNo nvarchar(8),
73. fName varchar(10),
74. lName varchar(10),
75. telNo nvarchar(30),
76. prefType varchar(6),
77. maxRent int,
78. primary key(clientNo)
79. )
80. select * from Clientone
81. insert into Clientone(clientNo, fName, lName, telNo, prefType, maxRent)
82. values('CR76', 'John', 'Kay', '0207-774-5632', 'Flat', 425)
83. insert into Clientone(clientNo, fName, lName, telNo, prefType, maxRent)
84. values('CR56', 'Aline', 'Stewart', '0141-848-1825', 'Flat', 350)
85. insert into Clientone(clientNo, fName, lName, telNo, prefType, maxRent)
86. values('CR74', 'Mike', 'Ritchie', '01475-392178', 'House', 750)
87. insert into Clientone(clientNo, fName, lName, telNo, prefType, maxRent)
88. values('CR62', 'Mary', 'Tregear', '01224-196720', 'Flat', 600)
89.

```

```

90. create table PrivateOwner(
91. ownerNo nvarchar(8),
92. fName varchar(5),
93. lName varchar(8),
94. [address] nvarchar(40),
95. telNo nvarchar(20)
96. )
97. select * from PrivateOwner
98. insert into PrivateOwner(ownerNo,fName,lName,[address],telNo)
99. values('C046','Joe','Keogh','2 Fergus Dr, Aberdeen AB27SX','01224-861212')
100. insert into PrivateOwner(ownerNo,fName,lName,[address],telNo)
101. values('C087','Carol','Farrel','6 Achray St, Glasgow G329DX','0141-357-
7419')
102. insert into PrivateOwner(ownerNo,fName,lName,[address],telNo)
103. values('C040','Tina','Murphy','63 Well St, Glasgow G42','0141-943-1728')
104. insert into PrivateOwner(ownerNo,fName,lName,[address],telNo)
105. values('C093','Tony','Shaw','12 Park P1, Glasgow G40QR','0141-225-7025')
106.
107. create table Viewing(
108. viewDate date,
109. comment varchar(20)
110. )
111.
112. select * from branch,staffthree

```

---

## Lab Task 10:

How to use Joins queries in query-based database of table.

### Code/Steps:

1. Open Microsoft SQL Server 2014 Management Studio.
2. Connect to the Server.
3. Click **New Query** from the top bar or press **Ctrl + N** to open new page.
4. create database Teacher
5. create table Teacher1(
6. Name varchar(30),
7. ID int,
8. CNIC varchar(30),
9. Adress varchar(30),
10. Designation varchar(30),
11. Gender varchar(30),
12. )
13. select \*from Teacher1
14. insert into Teacher1 values('Abdullah',235468,'333303-8515560-9','Faisalabad','CSMS','Male')
15. insert into Teacher1 values('Abdul-Reman',235869,'333303-1256787-1','Faisalabad','M.Phil','Male')
16. insert into Teacher1 values('Adnan',235470,'333303-8732907-3','Lahore','MSSE','Male')
17. insert into Teacher1 values('Abdul-Qadeer',235471,'333303-8556873-9','Faisalabad','CSMS','Male')

18. `insert into Teacher1 values('Sohaib-naz',235472,'333303-8515560-8','Sahiwal','MS-CHE','Male')`
19. `insert into Teacher1 values('Ahmad-Aftab',235473,'33303-3000983-1','Multan','MS-IT','Male')`
20. `insert into Teacher1 values('Saqib-Ameer',235474,'333303-851540-9','Faisalabad','MS-Physics','Male')`
21. `insert into Teacher1 values('Abdullah',235475,'333303-3126560-4','Gojra','MS-ENG','Male')`
22. `insert into Teacher1 values('Kashif-Haneef',235476,'333303-6798560-0','Toba','MS-Math','Male')`
23. `insert into Teacher1 values('Umer-Farooq',235477,'333303-6798320-6','Multan','M.Phil','Male')`
24. `insert into Teacher1 values('Khuram-Shehzad',235478,'333303-851670-7','Faisalabad','CSMS','Male')`
25. `insert into Teacher1 values('Aftab-ur-Rehman',235479,'333303-1295560-4','Lahore','CSMS','Male')`
- 26.

Results		Messages				
	Name	ID	CNIC	Adress	Designation	Gender
1	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male
2	Abdul-Rehan	235869	333303-1256787-1	Faisalabad	M.Phil	Male
3	Adnan	235470	333303-8732907-3	Lahore	MSSE	Male
4	Abdul-Qadeer	235471	333303-8556873-9	Faisalabad	CSMS	Male
5	Sohaib-naz	235472	333303-8515560-8	Sahiwal	MS-CHE	Male
6	Ahmad-Aftab	235473	33303-3000983-1	Multan	MS-IT	Male
7	Saqib-Ameer	235474	333303-851540-9	Faisalabad	MS-Physics	Male
8	Abdullah	235475	333303-3126560-4	Gojra	MS-ENG	Male
9	Kashif-Haneef	235476	333303-6798560-0	Toba	MS-Math	Male
10	Umer-Farooq	235477	333303-6798320-6	Multan	M.Phil	Male
11	Khuram-Shehzad	235478	333303-851670-7	Faisalabad	CSMS	Male
12	Aftab-ur-Rehman	235479	333303-1295560-4	Lahore	CSMS	Male

- 27.
- 28.
29. `create table Student1(`
30. `Name varchar(30),`
31. `Rollno int,`
32. `Adress varchar(30),`
33. `CNIC varchar(30),`
34. `Gender varchar(30),`
35. `)`
36. `select *from Student1`
37. `insert into Student1 values('Talha',8050,'chak-289','33303-8515560-5','Male')`
38. `insert into Student1 values('Rehan',8051,'chak-290','33303-5468299-5','Male')`
39. `insert into Student1 values('Ahmad',8052,'chak-291','33303-1276345-7','Male')`
40. `insert into Student1 values('Arslan',8053,'chak-292','33303-3245745-6','Male')`
41. `insert into Student1 values('Ali',8054,'chak-293','33303-3456745-7','Male')`
42. `insert into Student1 values('Aamir',8055,'chak-284','33303-2389001-4','Male')`
43. `insert into Student1 values('Abdullah',8056,'chak-285','33303-1567845-2','Male')`
44. `insert into Student1 values('Talha',8057,'chak-296','33303-1276345-7','Male')`
45. `insert into Student1 values('Umar',8058,'chak-297','33303-3476809-0','Male')`
46. `insert into Student1 values('Talha',8059,'chak-298','33303-3000983-1','Male')`
47. `insert into Student1 values('Naveed',8060,'chak-299','33303-3000989-1','Male')`
48. `insert into Student1 values('Rashid',8061,'chak-300','33303-1276345-7','Male')`
49. `insert into Student1 values('Qadir',8062,'chak-289','33303-4578356-5','Male')`

	Name	Rollno	Adress	CNIC	Gender
1	Talha	8050	chak-289	33303-8515560-5	Male
2	Rehan	8051	chak-290	33303-5468299-5	Male
3	Ahmad	8052	chak-291	33303-1276345-7	Male
4	Arslan	8053	chak-292	33303-3245745-6	Male
5	Ali	8054	chak-293	33303-3456745-7	Male
6	Aamir	8055	chak-284	33303-2389001-4	Male
7	Abdullah	8056	chak-285	33303-1567845-2	Male
8	Talha	8057	chak-296	33303-1276345-7	Male
9	Umar	8058	chak-297	33303-3476809-0	Male
10	Talha	8059	chak-298	33303-3000983-1	Male
11	Naveed	8060	chak-299	33303-3000989-1	Male
12	Rashid	8061	chak-300	33303-1276345-7	Male
13	Qadir	8062	chak-289	33303-4578356-5	Male

50. --select \* from DEPOSITOR1 inner join LOAN1 on DEPOSITOR1.AccNo=LOAN1.AccNo

51.

52. --returns matched rows from two table and unmatched from left table

53. SELECT \* FROM Teacher1 LEFT OUTER join Student1 on Teacher1.CNIC=Student1.CNIC

	Name	ID	CNIC	Adress	Designation	Gender	Name	Rollno	Adress	CNIC	Gender
1	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	NULL	NULL	NULL	NULL	NULL
2	Abdul-Reman	235869	333303-1256787-1	Faisalabad	M.Phil	Male	NULL	NULL	NULL	NULL	NULL
3	Adnan	235470	333303-8732907-3	Lahore	MSSE	Male	NULL	NULL	NULL	NULL	NULL
4	Abdul-Qadeer	235471	333303-8556873-9	Faisalabad	CSMS	Male	NULL	NULL	NULL	NULL	NULL
5	Sohaib-naz	235472	333303-8515560-8	Sahiwal	MS-CHE	Male	NULL	NULL	NULL	NULL	NULL
6	Ahmad-Aftab	235473	33303-3000983-1	Multan	MS-IT	Male	Talha	8059	chak-298	33303-3000983-1	Male
7	Saqib-Ameer	235474	333303-851540-9	Faisalabad	MS-Physics	Male	NULL	NULL	NULL	NULL	NULL
8	Abdullah	235475	333303-3126560-4	Gojra	MS-ENG	Male	NULL	NULL	NULL	NULL	NULL
9	Kashif-Haneef	235476	333303-6798560-0	Toba	MS-Math	Male	NULL	NULL	NULL	NULL	NULL
10	Umer-Farooq	235477	333303-6798320-6	Multan	M.Phil	Male	NULL	NULL	NULL	NULL	NULL
11	Khuram-Shehzad	235478	333303-851670-7	Faisalabad	CSMS	Male	NULL	NULL	NULL	NULL	NULL
12	Aftab-ur-Rehman	235479	333303-1295560-4	Lahore	CSMS	Male	NULL	NULL	NULL	NULL	NULL

54. --returns matched rows from two table and unmatched from right table

55. SELECT \* FROM Teacher1 right OUTER join Student1 on Teacher1.CNIC=Student1.CNIC

Results Messages											
	Name	ID	CNIC	Adress	Designation	Gender	Name	Rollno	Adress	CNIC	Gender
1	NULL	NULL	NULL	NULL	NULL	NULL	Talha	8050	chak-289	33303-8515560-5	Male
2	NULL	NULL	NULL	NULL	NULL	NULL	Rehan	8051	chak-290	33303-5468299-5	Male
3	NULL	NULL	NULL	NULL	NULL	NULL	Ahmad	8052	chak-291	33303-1276345-7	Male
4	NULL	NULL	NULL	NULL	NULL	NULL	Arslan	8053	chak-292	33303-3245745-6	Male
5	NULL	NULL	NULL	NULL	NULL	NULL	Ali	8054	chak-293	33303-3456745-7	Male
6	NULL	NULL	NULL	NULL	NULL	NULL	Aamir	8055	chak-284	33303-2389001-4	Male
7	NULL	NULL	NULL	NULL	NULL	NULL	Abdullah	8056	chak-285	33303-1567845-2	Male
8	NULL	NULL	NULL	NULL	NULL	NULL	Talha	8057	chak-296	33303-1276345-7	Male
9	NULL	NULL	NULL	NULL	NULL	NULL	Umar	8058	chak-297	33303-3476809-0	Male
10	Ahmad-Aftab	235473	33303-3000983-1	Multan	MS-IT	Male	Talha	8059	chak-298	33303-3000983-1	Male
11	NULL	NULL	NULL	NULL	NULL	NULL	Naveed	8060	chak-299	33303-3000989-1	Male
12	NULL	NULL	NULL	NULL	NULL	NULL	Rashid	8061	chak-300	33303-1276345-7	Male
13	NULL	NULL	NULL	NULL	NULL	NULL	Qadir	8062	chak-289	33303-4578356-5	Male

56. `SELECT * FROM Teacher1 FULL OUTER join Student1 on Teacher1.CNIC=Student1.CNIC`

	Name	ID	CNIC	Adress	Designation	Gender	Name	Rollno	Adress	CNIC	Gender
1	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	NULL	NULL	NULL	NULL	NULL
2	Abdul-Reman	235869	333303-1256787-1	Faisalabad	M.Phil	Male	NULL	NULL	NULL	NULL	NULL
3	Adnan	235470	333303-8732907-3	Lahore	MSSE	Male	NULL	NULL	NULL	NULL	NULL
4	Abdul-Qadeer	235471	333303-8556873-9	Faisalabad	CSMS	Male	NULL	NULL	NULL	NULL	NULL
5	Sohaib-naz	235472	333303-8515560-8	Sahiwal	MS-CHE	Male	NULL	NULL	NULL	NULL	NULL
6	Ahmad-Aftab	235473	33303-3000983-1	Multan	MS-IT	Male	Talha	8059	chak-298	33303-3000983-1	Male
7	Saqib-Ameer	235474	333303-851540-9	Faisalabad	MS-Physics	Male	NULL	NULL	NULL	NULL	NULL
8	Abdullah	235475	333303-3126560-4	Gojra	MS-ENG	Male	NULL	NULL	NULL	NULL	NULL
9	Kashif-Haneef	235476	333303-6798560-0	Toba	MS-Math	Male	NULL	NULL	NULL	NULL	NULL
10	Umer-Farooq	235477	333303-6798320-6	Multan	M.Phil	Male	NULL	NULL	NULL	NULL	NULL
11	Khuram-Shehzad	235478	333303-851670-7	Faisalabad	CSMS	Male	NULL	NULL	NULL	NULL	NULL
12	Aftab-ur-Rehman	235479	333303-1295560-4	Lahore	CSMS	Male	NULL	NULL	NULL	NULL	NULL
13	NULL	NULL	NULL	NULL	NULL	NULL	Talha	8050	chak-289	33303-8515560-5	Male
14	NULL	NULL	NULL	NULL	NULL	NULL	Rehan	8051	chak-290	33303-5468299-5	Male
15	NULL	NULL	NULL	NULL	NULL	NULL	Ahmad	8052	chak-291	33303-1276345-7	Male
16	NULL	NULL	NULL	NULL	NULL	NULL	Arslan	8053	chak-292	33303-3245745-6	Male
17	NULL	NULL	NULL	NULL	NULL	NULL	Ali	8054	chak-293	33303-3456745-7	Male
18	NULL	NULL	NULL	NULL	NULL	NULL	Aamir	8055	chak-284	33303-2389001-4	Male
19	NULL	NULL	NULL	NULL	NULL	NULL	Abdu...	8056	chak-285	33303-1567845-2	Male
20	NULL	NULL	NULL	NULL	NULL	NULL	Talha	8057	chak-296	33303-1276345-7	Male
21	NULL	NULL	NULL	NULL	NULL	NULL	Umar	8058	chak-297	33303-3476809-0	Male
22	NULL	NULL	NULL	NULL	NULL	NULL	Nav...	8060	chak-299	33303-3000989-1	Male
23	NULL	NULL	NULL	NULL	NULL	NULL	Rashid	8061	chak-300	33303-1276345-7	Male
24	NULL	NULL	NULL	NULL	NULL	NULL	Qadir	8062	chak-289	33303-4578356-5	Male

57. `--inner join with equi`

58. `select * from teacher1 inner join student1 on Teacher1.CNIC=Student1.CNIC`

Results Messages											
	Name	ID	CNIC	Adress	Designation	Gender	Name	Rollno	Adress	CNIC	Gender
1	Ahmad-Aftab	235473	33303-3000983-1	Multan	MS-IT	Male	Talha	8059	chak-298	33303-3000983-1	Male

59.

60.

61. `--non equi inner join`

62. `select * from teacher1 inner join student1 on Teacher1.name<=Student1.name`



Results		Messages									
	Name	ID	CNIC	Adress	Designation	Gender	Name	Rollno	Adress	CNIC	Gender
1	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Talha	8050	chak-289	33303-8515560-5	Male
2	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Rehan	8051	chak-290	33303-5468299-5	Male
3	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Ahmad	8052	chak-291	33303-1276345-7	Male
4	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Arslan	8053	chak-292	33303-3245745-6	Male
5	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Ali	8054	chak-293	33303-3456745-7	Male
6	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Abdullah	8056	chak-285	33303-1567845-2	Male
7	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Talha	8057	chak-296	33303-1276345-7	Male
8	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Umar	8058	chak-297	33303-3476809-0	Male
9	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Talha	8059	chak-298	33303-3000983-1	Male
10	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Naveed	8060	chak-299	33303-3000989-1	Male
11	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Rashid	8061	chak-300	33303-1276345-7	Male
12	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Qadir	8062	chak-289	33303-4578356-5	Male
13	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Talha	8050	chak-289	33303-8515560-5	Male
14	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Rehan	8051	chak-290	33303-5468299-5	Male
15	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Ahmad	8052	chak-291	33303-1276345-7	Male
16	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Arslan	8053	chak-292	33303-3245745-6	Male
17	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Ali	8054	chak-293	33303-3456745-7	Male
18	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Abdullah	8056	chak-285	33303-1567845-2	Male
19	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Talha	8057	chak-296	33303-1276345-7	Male
20	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Umar	8058	chak-297	33303-3476809-0	Male
21	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Talha	8059	chak-298	33303-3000983-1	Male
22	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Naveed	8060	chak-299	33303-3000989-1	Male
23	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Rashid	8061	chak-300	33303-1276345-7	Male
24	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Qadir	8062	chak-289	33303-4578356-5	Male
25	Adnan	235470	333303-8732907-3	Lahore	MSSE	Male	Talha	8050	chak-289	33303-8515560-5	Male

63. --natural inner join

64. select CNIC from teacher1 inner join student1 on Teacher1.name<=Student1.name

65. select \*from student1,teacher1

66.

67. --Cross-Join

68. select \* from Teacher1 cross join Student1

Results							Messages				
	Name	ID	CNIC	Adress	Designation	Gender	Name	Rollno	Adress	CNIC	Gender
1	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Talha	8050	chak-289	33303-8515560-5	Male
2	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Rehan	8051	chak-290	33303-5468299-5	Male
3	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Ahmad	8052	chak-291	33303-1276345-7	Male
4	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Arslan	8053	chak-292	33303-3245745-6	Male
5	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Ali	8054	chak-293	33303-3456745-7	Male
6	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Aamir	8055	chak-284	33303-2389001-4	Male
7	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Abdullah	8056	chak-285	33303-1567845-2	Male
8	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Talha	8057	chak-296	33303-1276345-7	Male
9	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Umar	8058	chak-297	33303-3476809-0	Male
10	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Talha	8059	chak-298	33303-3000983-1	Male
11	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Naveed	8060	chak-299	33303-3000989-1	Male
12	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Rashid	8061	chak-300	33303-1276345-7	Male
13	Abdullah	235468	333303-8515560-9	Faisalabad	CSMS	Male	Qadir	8062	chak-289	33303-4578356-5	Male
14	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Talha	8050	chak-289	33303-8515560-5	Male
15	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Rehan	8051	chak-290	33303-5468299-5	Male
16	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Ahmad	8052	chak-291	33303-1276345-7	Male
17	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Arslan	8053	chak-292	33303-3245745-6	Male
18	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Ali	8054	chak-293	33303-3456745-7	Male
19	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Aamir	8055	chak-284	33303-2389001-4	Male
20	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Abdullah	8056	chak-285	33303-1567845-2	Male
21	Abdul...	235869	333303-1256787-1	Faisalabad	M.Phil	Male	Talha	8057	chak-296	33303-1276345-7	Male

... THE

END ...