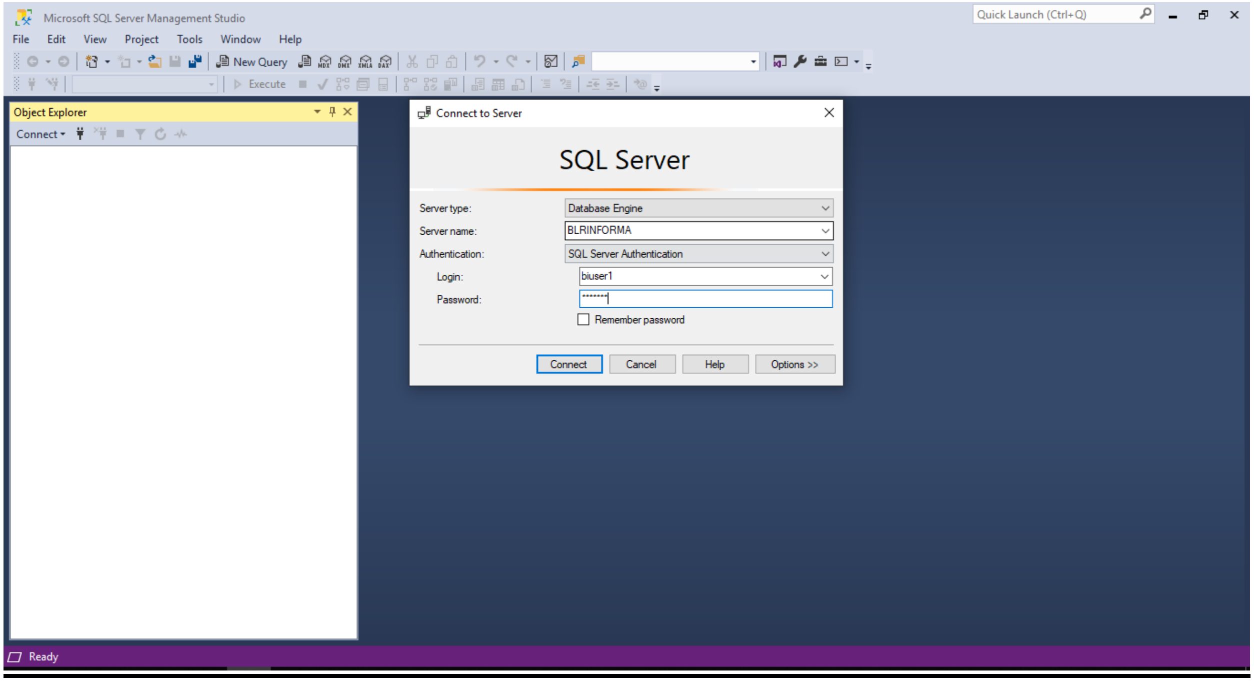
# 1.1 Steps to connect to the SQL Server 2012

**1.**



SQL Server

Server type: Database Engine

Server name: BLRINFORMA

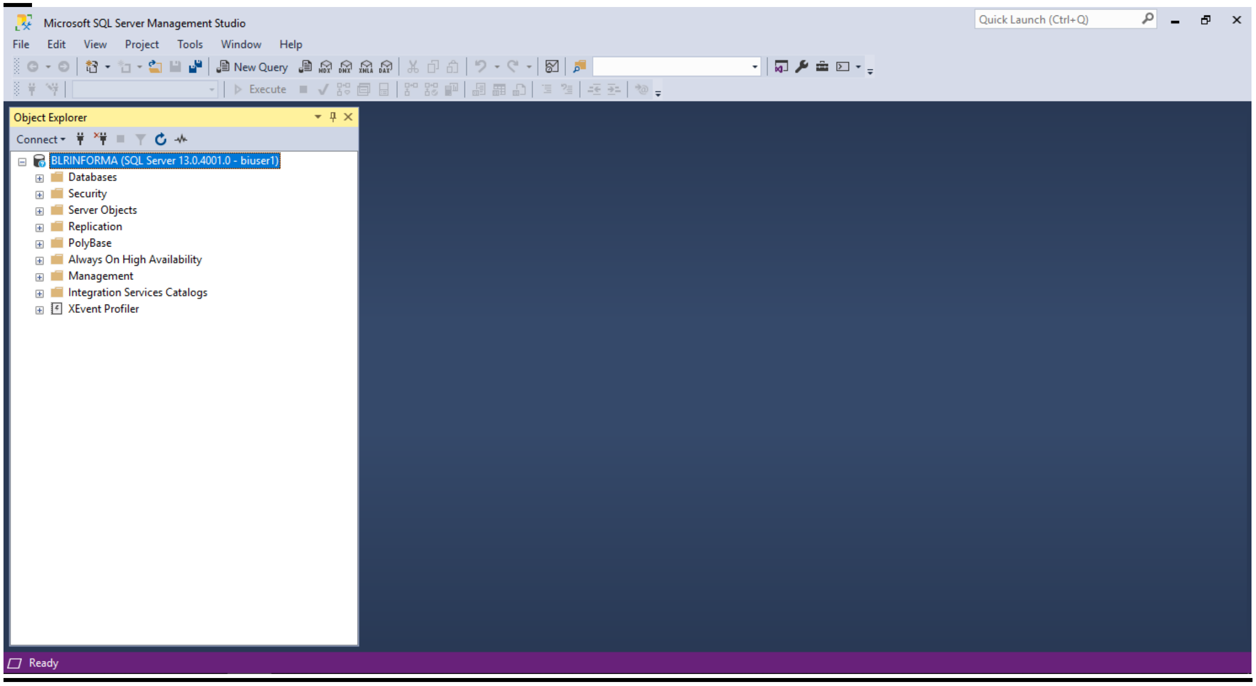
Authentication: SQL Server Authentication

Login: biuser1

Password: *******

□ Remember password

**2.**

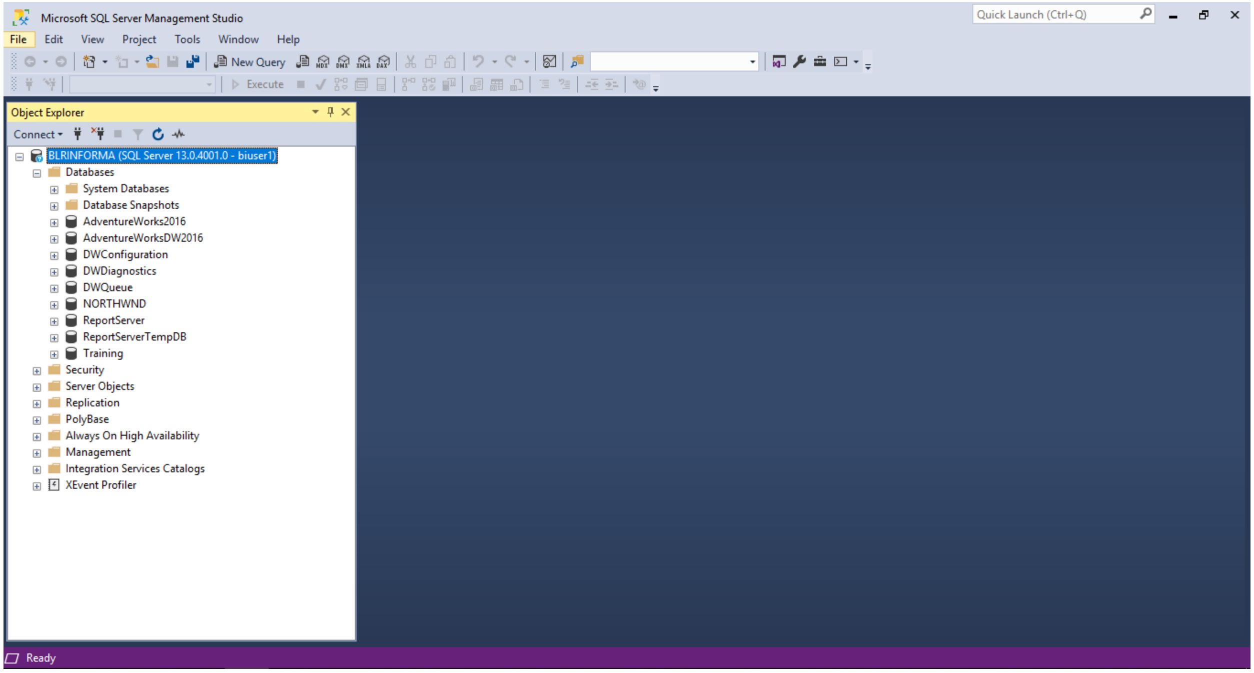

Microsoft SQL Server Management Studio
Quick Launch (Ctrl+Q)
File Edit View Project Tools Window Help
New Query
Execute
Object Explorer
Connect
Ready

BLRINFORMA (SQL Server 13.0.4001.0 - biuser1)

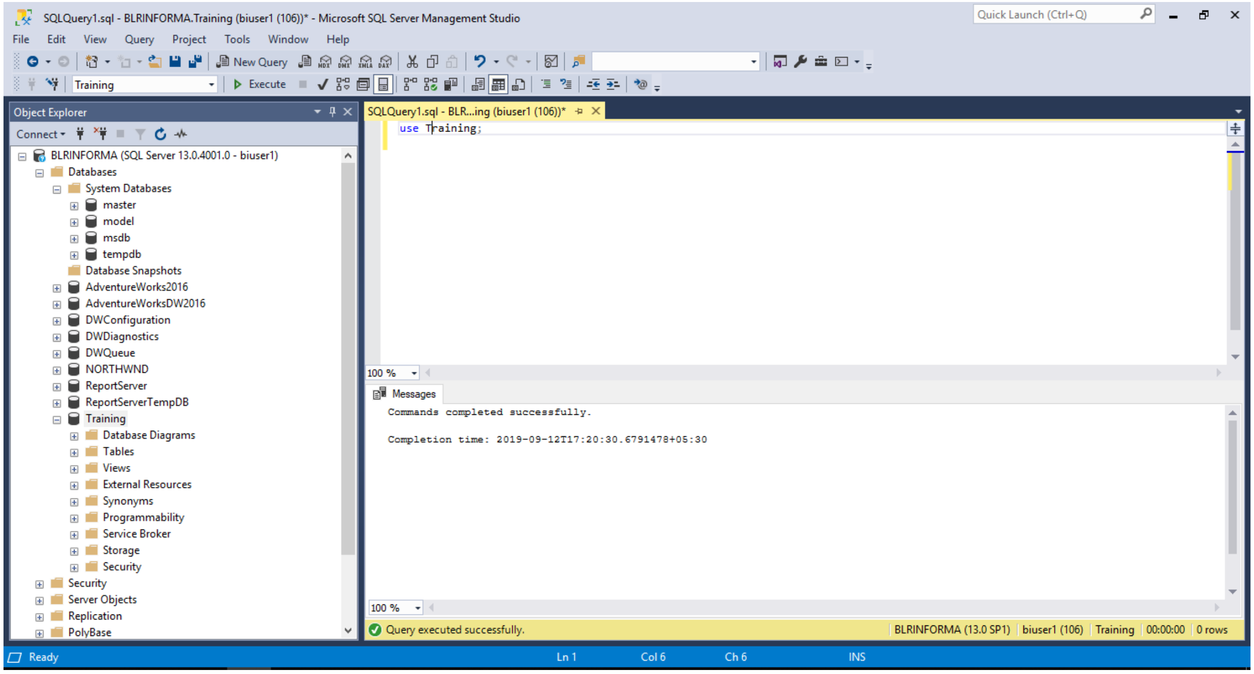
- Databases
- Security
- Server Objects
- Replication
- PolyBase
- Always On High Availability
- Management
- Integration Services Catalogs
- XEvent Profiler

# 1.2 Getting Familiar with SQL Server

## 1.



## 2.

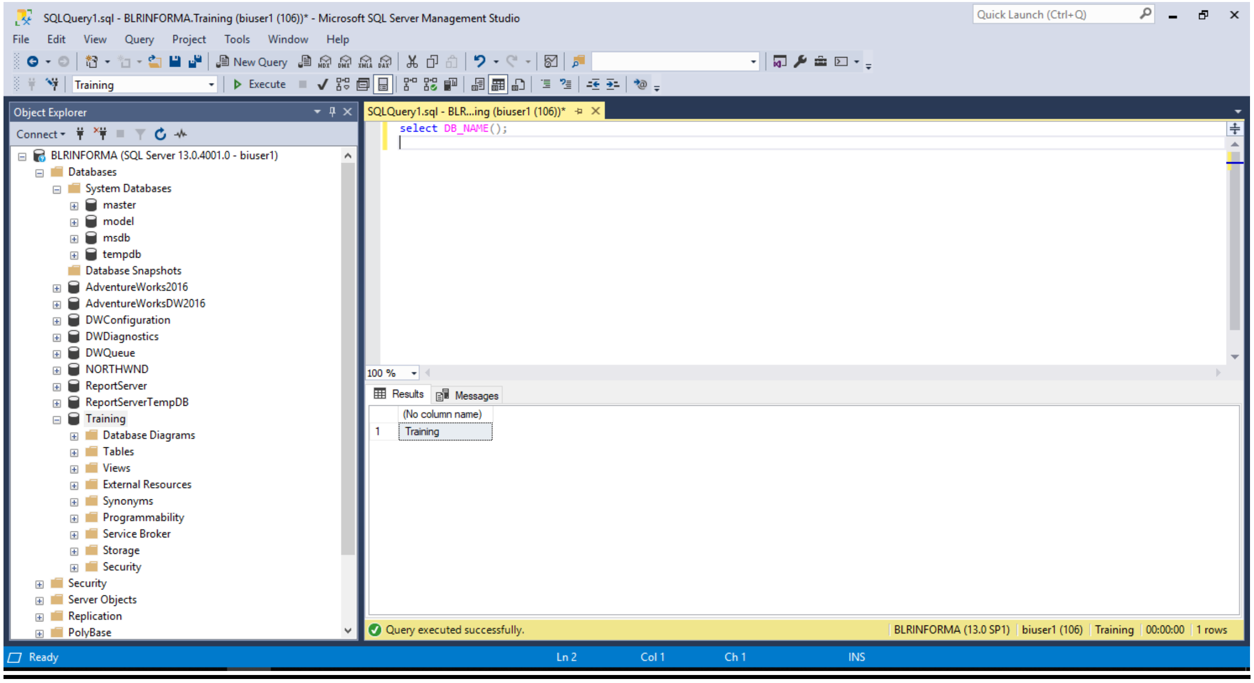


```sql
use Training;
```

```
Commands completed successfully.

Completion time: 2019-09-12T17:20:30.6791478+05:30
```

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (106) | Training | 00:00:00 | 0 rows

# 3.

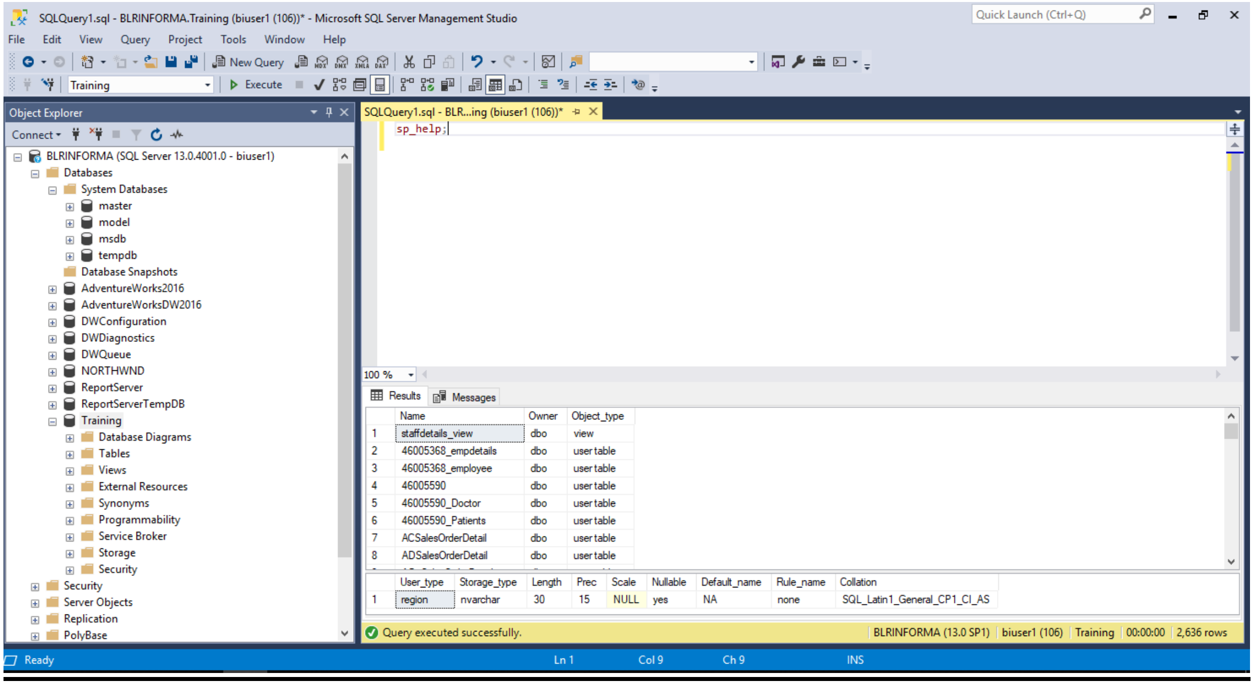


```
select DB_NAME();
```

| | (No column name) |
|---|---|
| 1 | Training |

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (106) | Training | 00:00:00 | 1 rows

# 4.



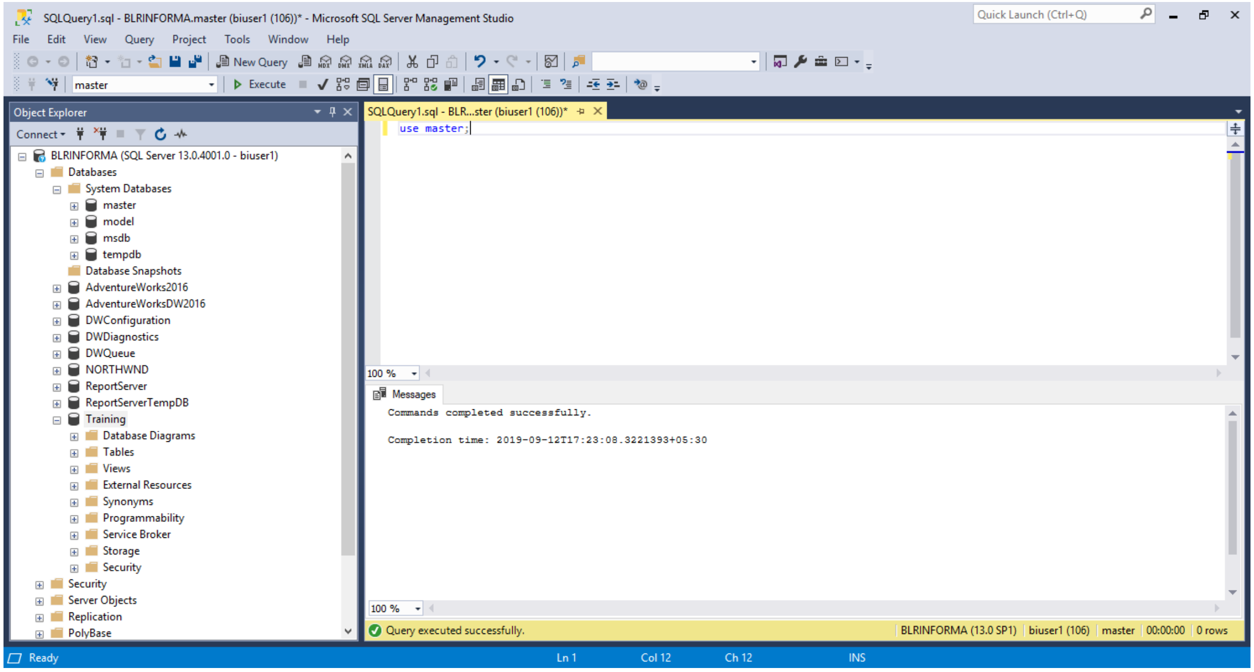
```
sp_help;
```

| | Name | Owner | Object_type |
|---|---|---|---|
| 1 | staffdetails_view | dbo | view |
| 2 | 46005368_empdetails | dbo | user table |
| 3 | 46005368_employee | dbo | user table |
| 4 | 46005590 | dbo | user table |
| 5 | 46005590_Doctor | dbo | user table |
| 6 | 46005590_Patients | dbo | user table |
| 7 | ACSalesOrderDetail | dbo | user table |
| 8 | ADSalesOrderDetail | dbo | user table |

| | User_type | Storage_type | Length | Prec | Scale | Nullable | Default_name | Rule_name | Collation |
|---|---|---|---|---|---|---|---|---|---|
| 1 | region | nvarchar | 30 | 15 | NULL | yes | NA | none | SQL_Latin1_General_CP1_CI_AS |

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (106) | Training | 00:00:00 | 2,636 rows

## 5.

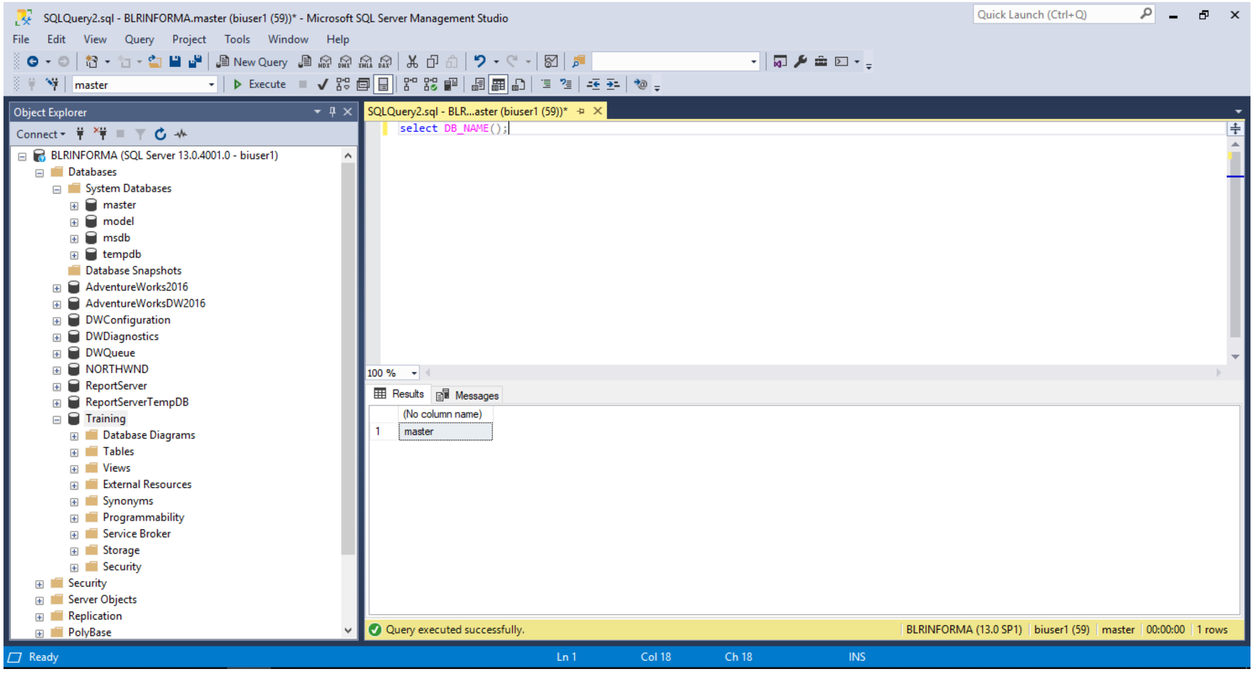


```
use master;
```

```
Commands completed successfully.

Completion time: 2019-09-12T17:23:08.3221393+05:30
```

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (106) | master | 00:00:00 | 0 rows

## 6.

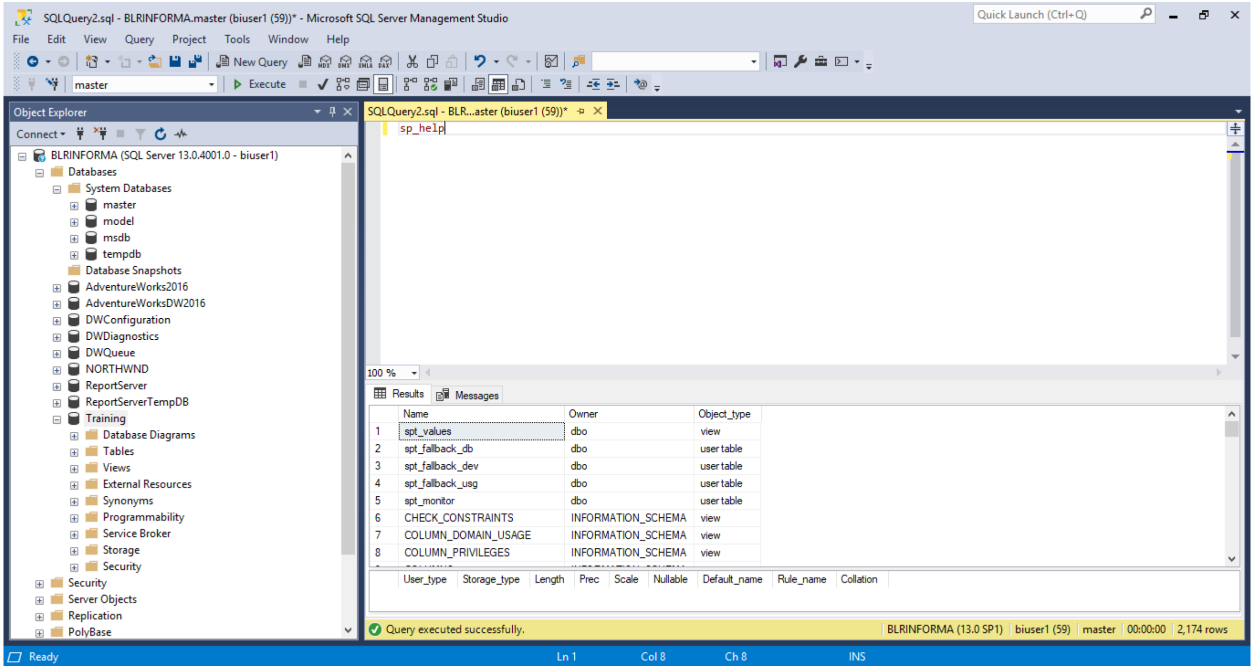


```
select DB_NAME();
```

|   | (No column name) |
|---|---|
| 1 | master |

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (59) | master | 00:00:00 | 1 rows

## 7.



```sql
sp_help
```

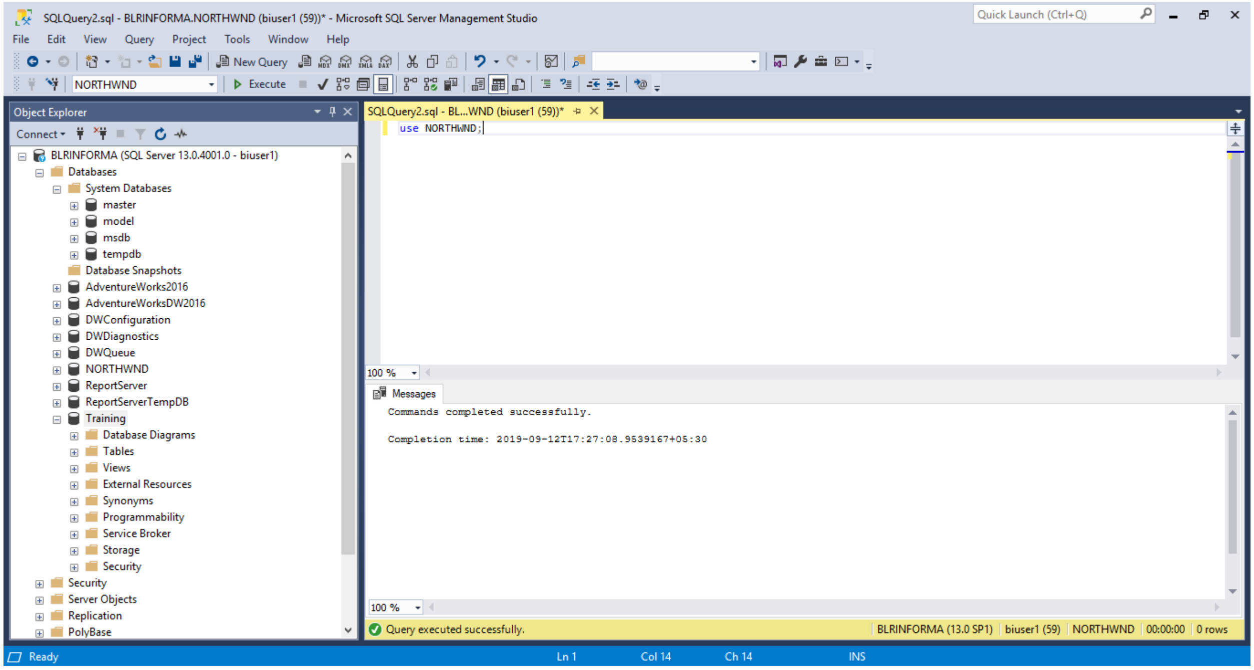
| | Name | Owner | Object_type |
|---|---|---|---|
| 1 | spt_values | dbo | view |
| 2 | spt_fallback_db | dbo | user table |
| 3 | spt_fallback_dev | dbo | user table |
| 4 | spt_fallback_usg | dbo | user table |
| 5 | spt_monitor | dbo | user table |
| 6 | CHECK_CONSTRAINTS | INFORMATION_SCHEMA | view |
| 7 | COLUMN_DOMAIN_USAGE | INFORMATION_SCHEMA | view |
| 8 | COLUMN_PRIVILEGES | INFORMATION_SCHEMA | view |

| User_type | Storage_type | Length | Prec | Scale | Nullable | Default_name | Rule_name | Collation |
|---|---|---|---|---|---|---|---|---|

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (59) | master | 00:00:00 | 2,174 rows

Ln 1 Col 8 Ch 8 INS

## 8.



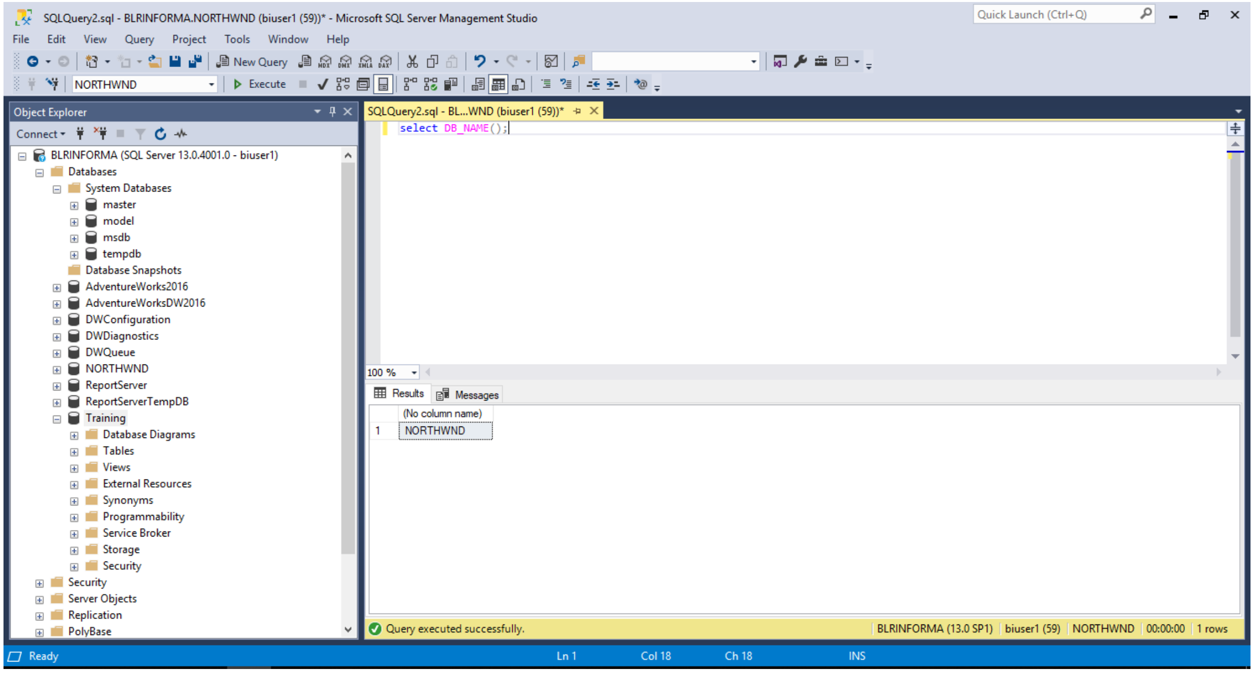
```sql
use NORTHWND;
```

```
Commands completed successfully.

Completion time: 2019-09-12T17:27:08.9539167+05:30
```

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (59) | NORTHWND | 00:00:00 | 0 rows

Ln 1 Col 14 Ch 14 INS

# 9.



SQLQuery2.sql - BLRINFORMA.NORTHWND (biuser1 (59))* - Microsoft SQL Server Management Studio

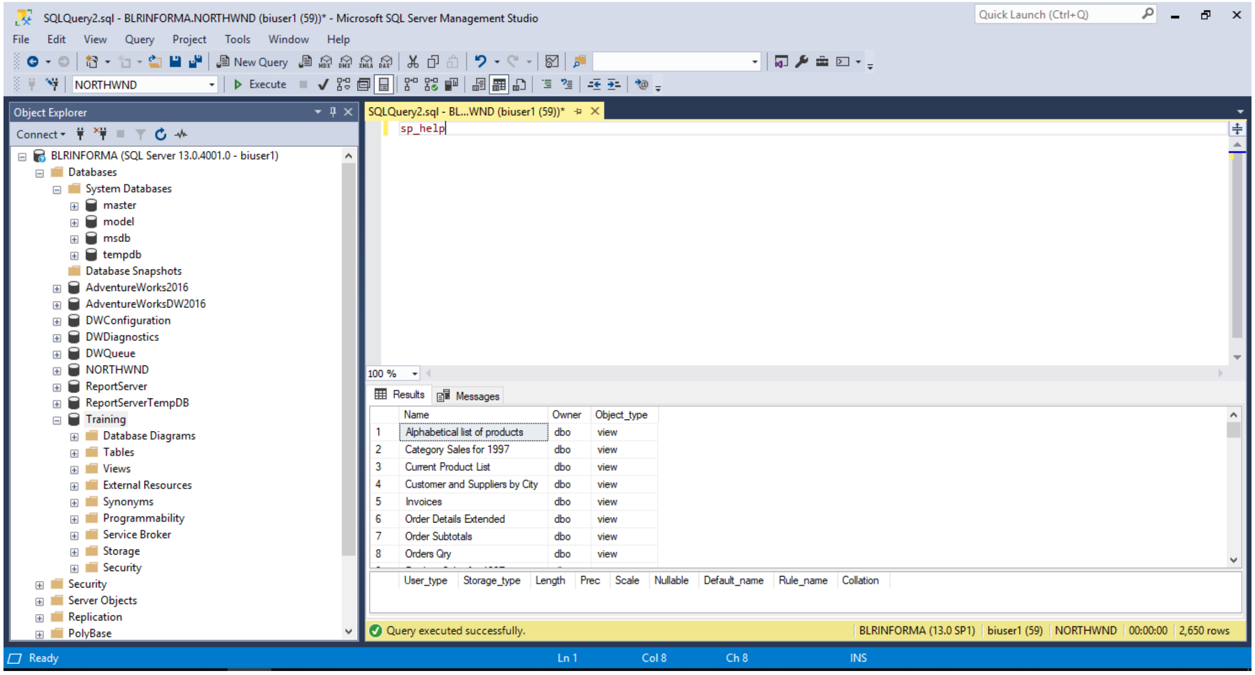
```
select DB_NAME();
```

| | (No column name) |
|---|---|
| 1 | NORTHWND |

Query executed successfully. BLRINFORMA (13.0 SP1) | biuser1 (59) | NORTHWND | 00:00:00 | 1 rows

Ready Ln 1 Col 18 Ch 18 INS

# 10.



SQLQuery2.sql - BLRINFORMA.NORTHWND (biuser1 (59))* - Microsoft SQL Server Management Studio

```
sp_help
```

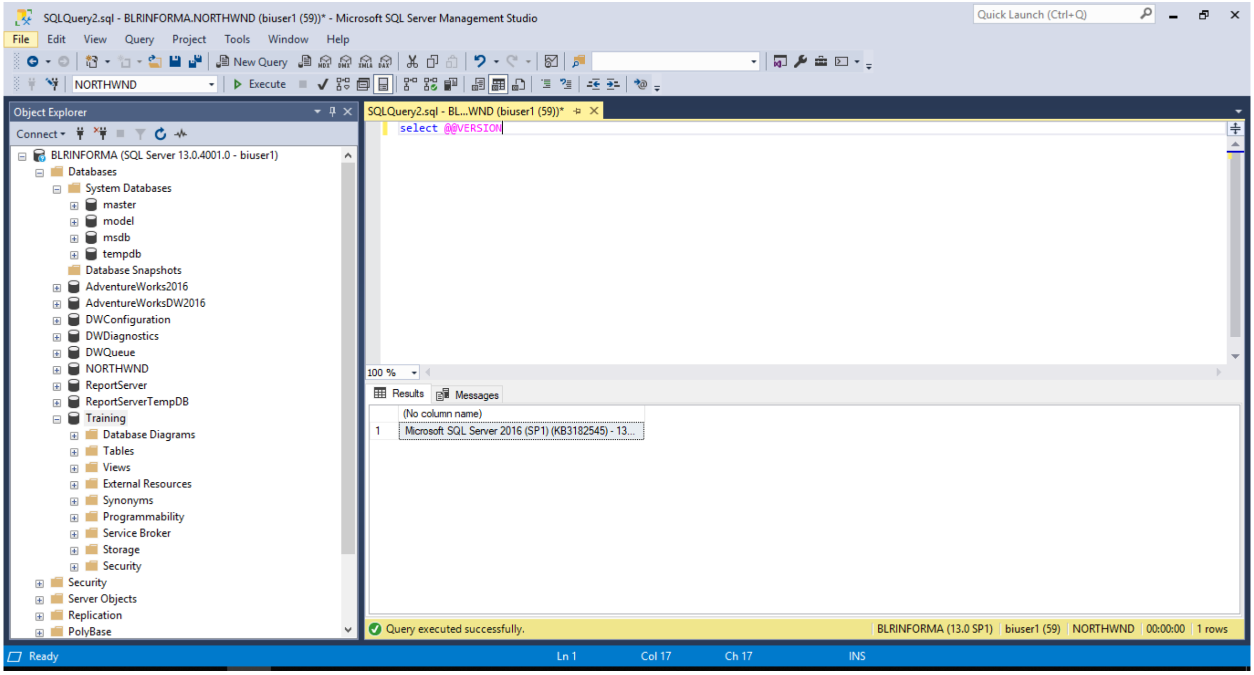
| | Name | Owner | Object_type |
|---|---|---|---|
| 1 | Alphabetical list of products | dbo | view |
| 2 | Category Sales for 1997 | dbo | view |
| 3 | Current Product List | dbo | view |
| 4 | Customer and Suppliers by City | dbo | view |
| 5 | Invoices | dbo | view |
| 6 | Order Details Extended | dbo | view |
| 7 | Order Subtotals | dbo | view |
| 8 | Orders Qry | dbo | view |

| User_type | Storage_type | Length | Prec | Scale | Nullable | Default_name | Rule_name | Collation |
|---|---|---|---|---|---|---|---|---|

Query executed successfully. BLRINFORMA (13.0 SP1) | biuser1 (59) | NORTHWND | 00:00:00 | 2,650 rows

Ready Ln 1 Col 8 Ch 8 INS

## 11.

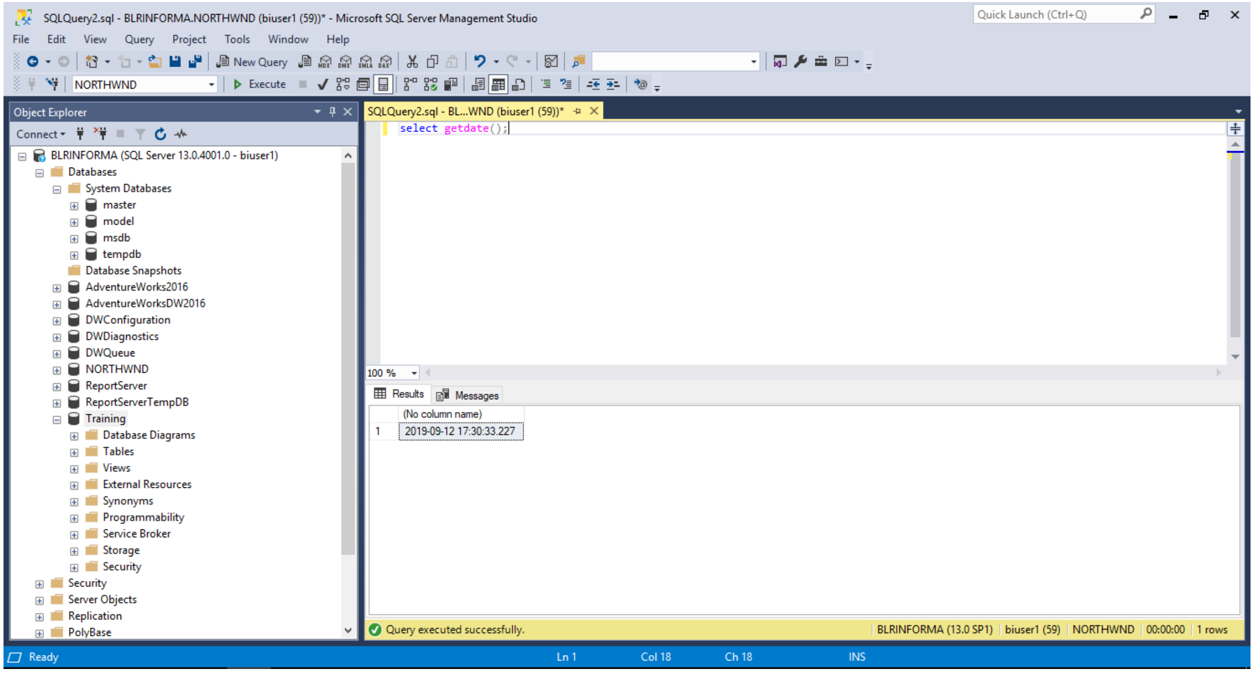


```
select @@VERSION
```

|   | (No column name) |
|---|---|
| 1 | Microsoft SQL Server 2016 (SP1) (KB3182545) - 13... |

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (59) | NORTHWND | 00:00:00 | 1 rows

## 12.

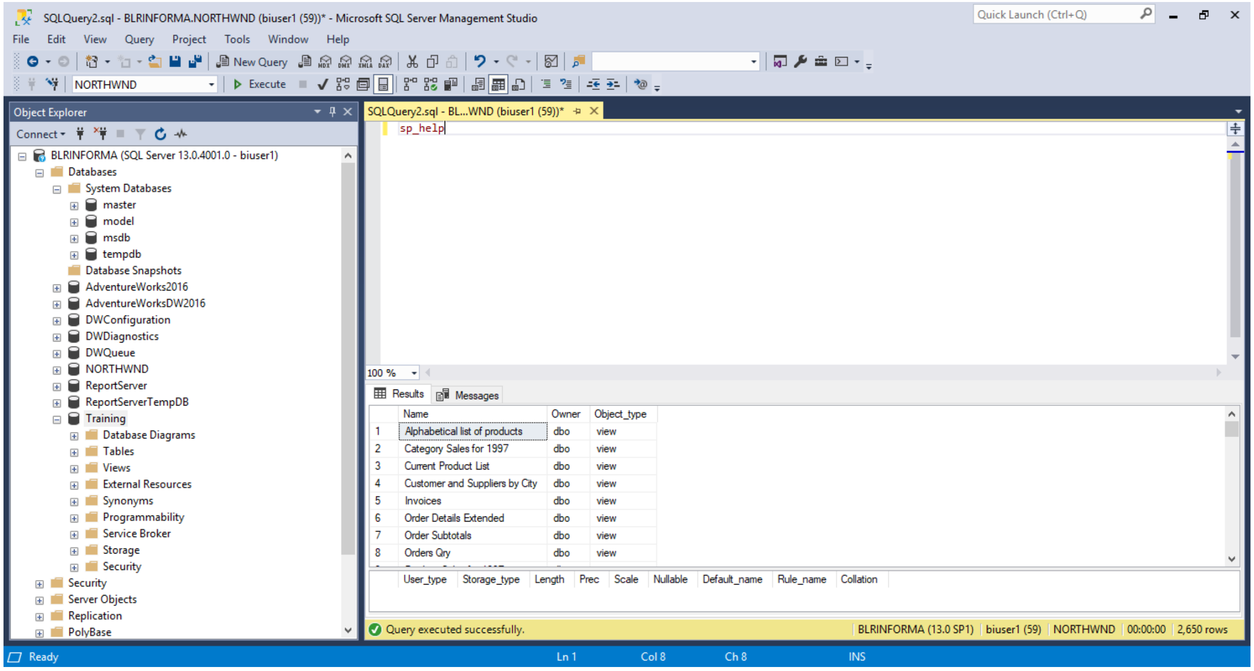


```
select getdate();
```

|   | (No column name) |
|---|---|
| 1 | 2019-09-12 17:30:33.227 |

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (59) | NORTHWND | 00:00:00 | 1 rows

## 13.



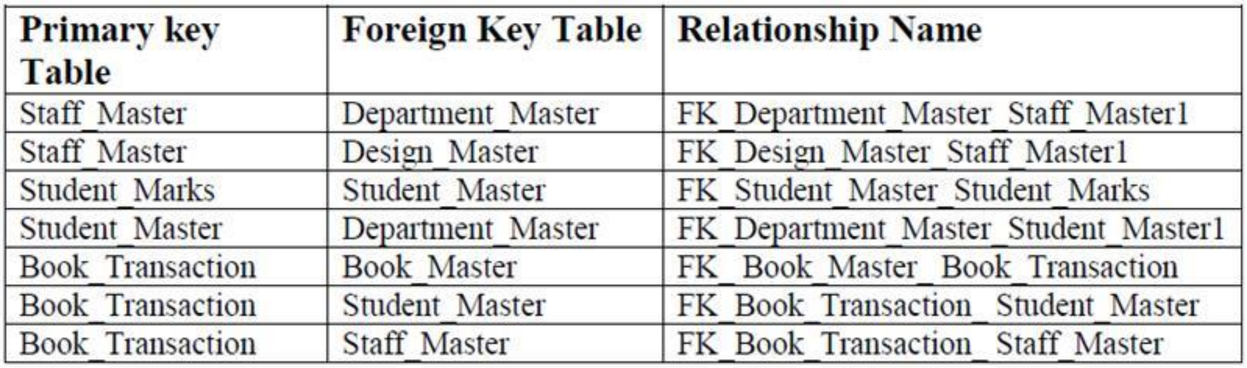
```
sp_help
```

| | Name | Owner | Object_type |
|---|---|---|---|
| 1 | Alphabetical list of products | dbo | view |
| 2 | Category Sales for 1997 | dbo | view |
| 3 | Current Product List | dbo | view |
| 4 | Customer and Suppliers by City | dbo | view |
| 5 | Invoices | dbo | view |
| 6 | Order Details Extended | dbo | view |
| 7 | Order Subtotals | dbo | view |
| 8 | Orders Qry | dbo | view |

| User_type | Storage_type | Length | Prec | Scale | Nullable | Default_name | Rule_name | Collation |
|---|---|---|---|---|---|---|---|---|

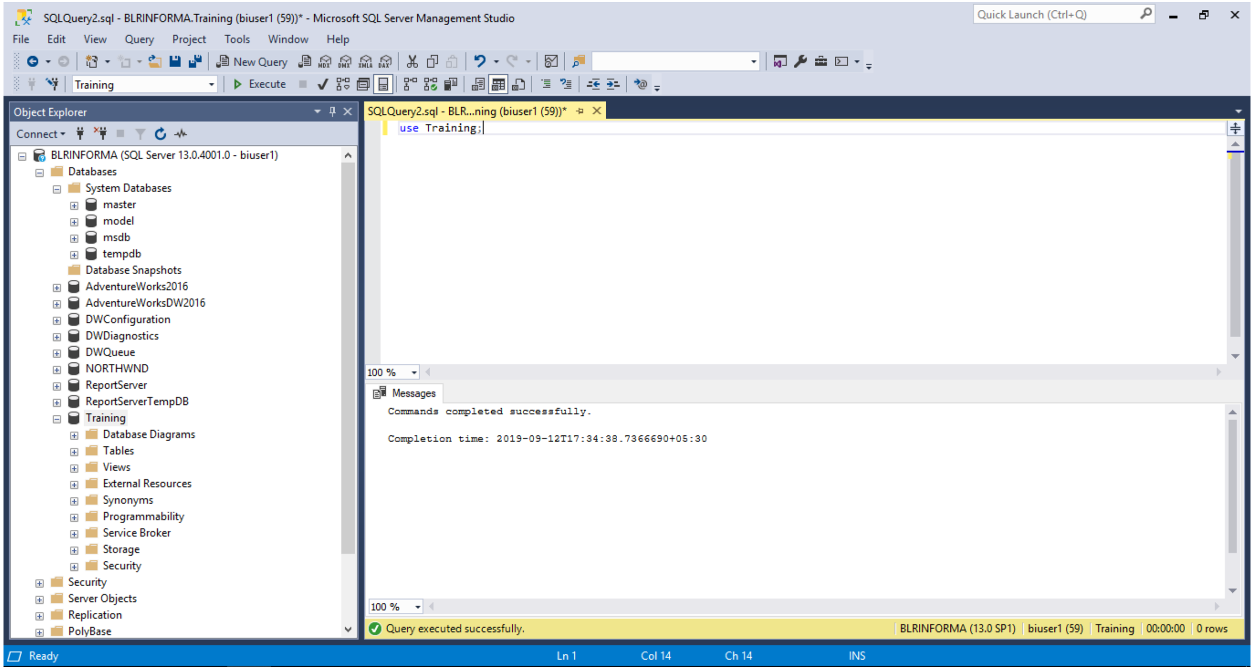
Query executed successfully. BLRINFORMA (13.0 SP1) | biuser1 (59) | NORTHWND | 00:00:00 | 2,650 rows

## 14.



| **Primary key Table** | **Foreign Key Table** | **Relationship Name** |
|---|---|---|
| Staff_Master | Department_Master | FK_Department_Master_Staff_Master1 |
| Staff_Master | Design_Master | FK_Design_Master_Staff_Master1 |
| Student_Marks | Student_Master | FK_Student_Master_Student_Marks |
| Student_Master | Department_Master | FK_Department_Master_Student_Master1 |
| Book_Transaction | Book_Master | FK_Book_Master_Book_Transaction |
| Book_Transaction | Student_Master | FK_Book_Transaction_Student_Master |
| Book_Transaction | Staff_Master | FK_Book_Transaction_Staff_Master |

## 15.

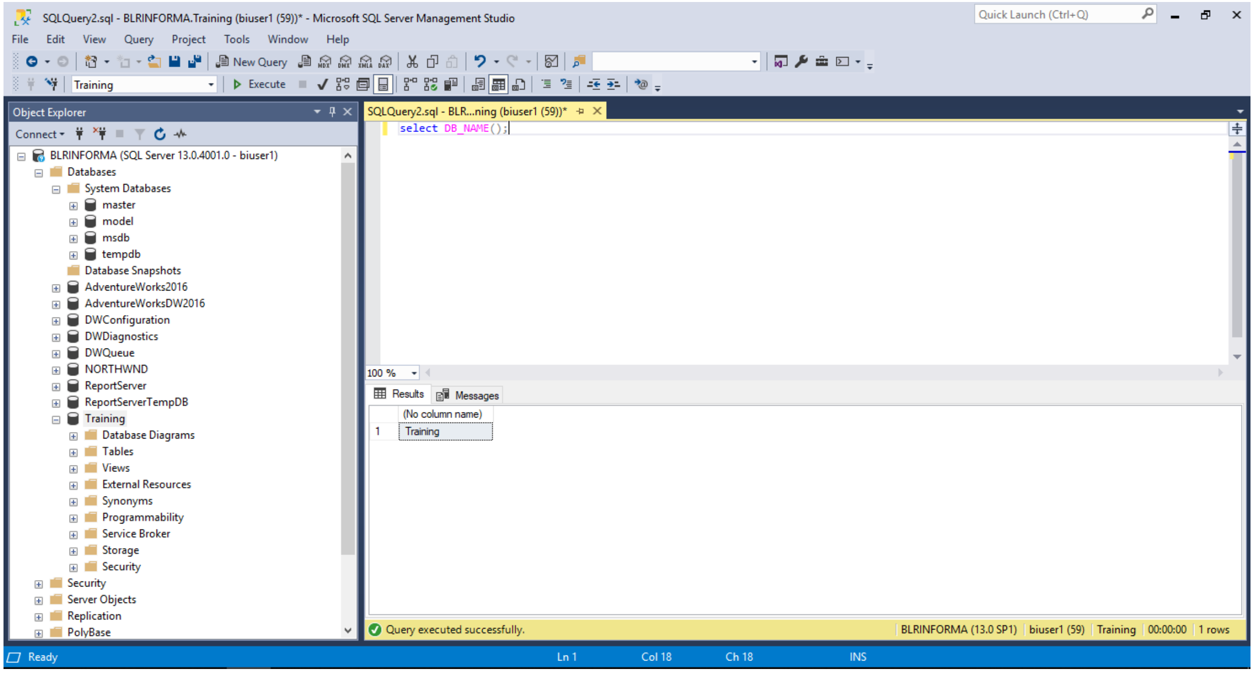


```
use Training;
```

```
Commands completed successfully.

Completion time: 2019-09-12T17:34:38.7366690+05:30
```

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (59) | Training | 00:00:00 | 0 rows

## 16.

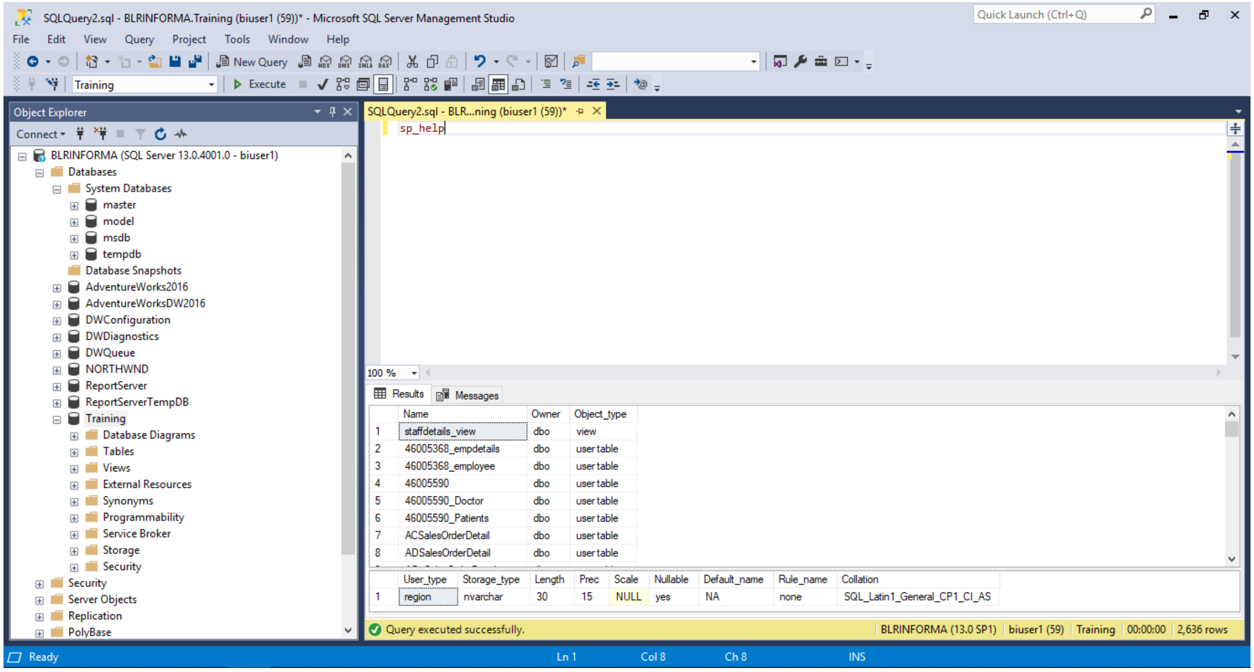


```
select DB_NAME();
```

|  | (No column name) |
|---|---|
| 1 | Training |

Query executed successfully. | BLRINFORMA (13.0 SP1) | biuser1 (59) | Training | 00:00:00 | 1 rows

## 17.



```
sp_help
```

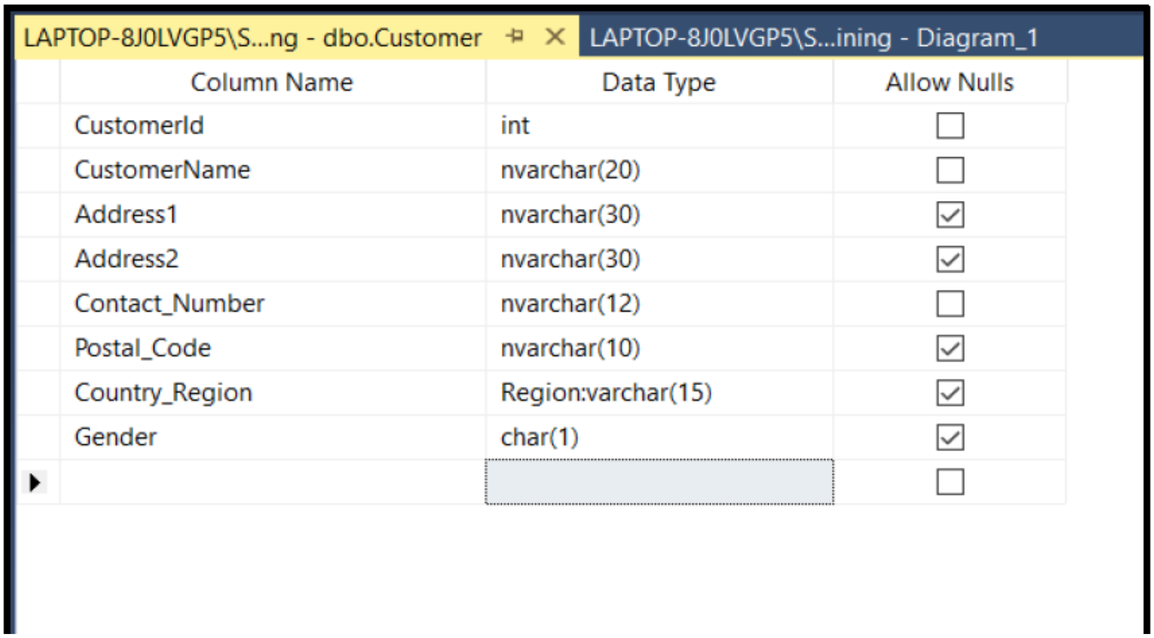
| | Name | Owner | Object_type |
|---|---|---|---|
| 1 | staffdetails_view | dbo | view |
| 2 | 46005368_empdetails | dbo | user table |
| 3 | 46005368_employee | dbo | user table |
| 4 | 46005590 | dbo | user table |
| 5 | 46005590_Doctor | dbo | user table |
| 6 | 46005590_Patients | dbo | user table |
| 7 | ACSalesOrderDetail | dbo | user table |
| 8 | ADSalesOrderDetail | dbo | user table |

| | User_type | Storage_type | Length | Prec | Scale | Nullable | Default_name | Rule_name | Collation |
|---|---|---|---|---|---|---|---|---|---|
| 1 | region | nvarchar | 30 | 15 | NULL | yes | NA | none | SQL_Latin1_General_CP1_CI_AS |

```
Query executed successfully.    BLRINFORMA (13.0 SP1) | biuser1 (59) | Training | 00:00:00 | 2,636 rows
```

# 1.3 SQL Languages – DDL- Creating Tables, Alias Data Type and Constraints

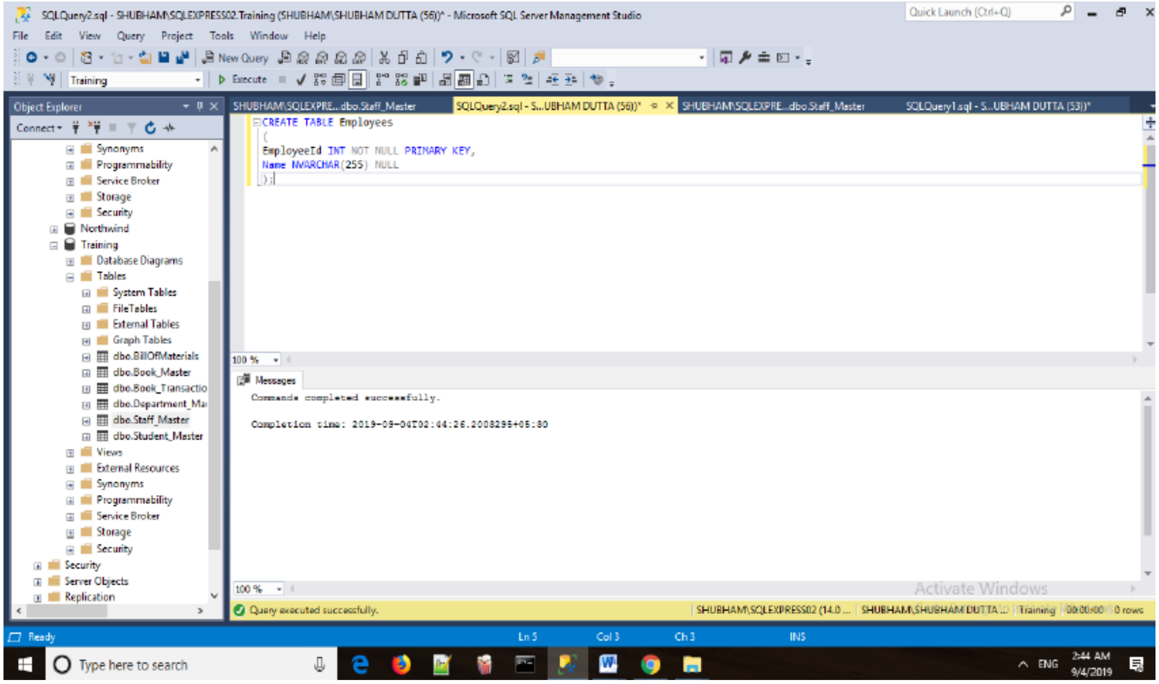
## Table 1.



LAPTOP-8J0LVGP5\S...ng - dbo.Customer
LAPTOP-8J0LVGP5\S...ining - Diagram_1

| Column Name | Data Type | Allow Nulls |
|---|---|---|
| CustomerId | int | □ |
| CustomerName | nvarchar(20) | □ |
| Address1 | nvarchar(30) | ☑ |
| Address2 | nvarchar(30) | ☑ |
| Contact_Number | nvarchar(12) | □ |
| Postal_Code | nvarchar(10) | ☑ |
| Country_Region | Region:varchar(15) | ☑ |
| Gender | char(1) | ☑ |
| | | □ |

## Table 2



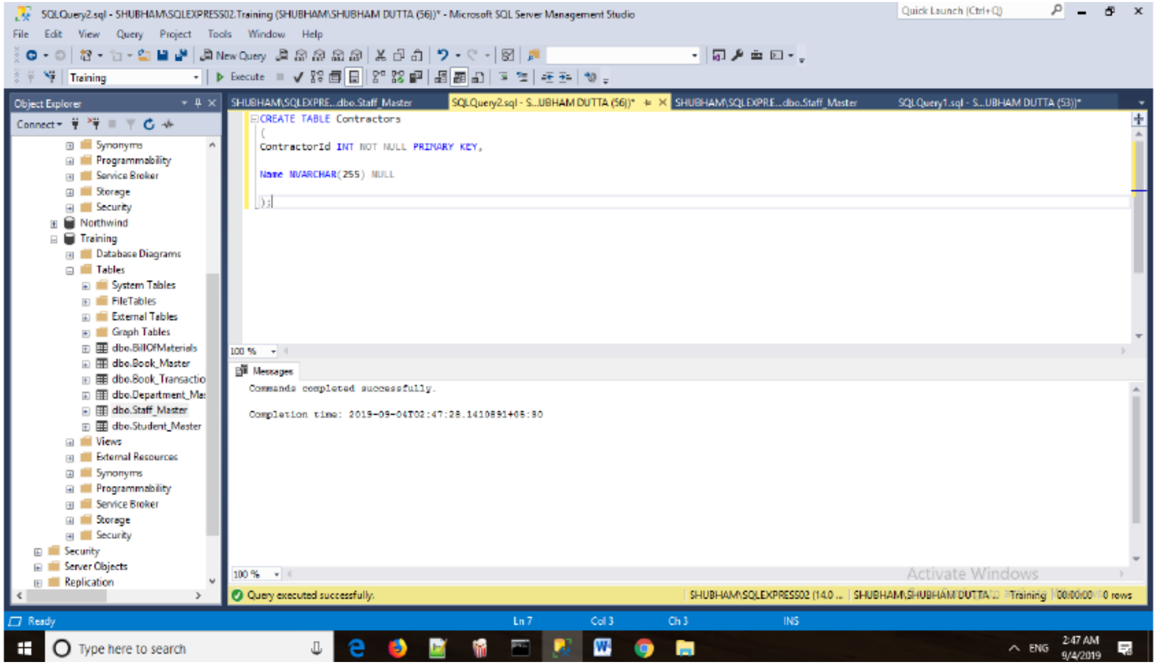
SQLQuery2.sql - SHUBHAM\SQLEXPRESS02.Training (SHUBHAM\SHUBHAM DUTTA (56))* - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query
Execute
Training
Object Explorer
SHUBHAM\SQLEXPRE...dbo.Staff_Master
SQLQuery2.sql - S...UBHAM DUTTA (56))*
SQLQuery1.sql - S...UBHAM DUTTA (53))*
Messages
Ready

```
CREATE TABLE Employees
(
EmployeeId INT NOT NULL PRIMARY KEY,
Name NVARCHAR(255) NULL
);
```

```
Commands completed successfully.

Completion time: 2019-09-04T02:44:26.2008295+05:30
```

Query executed successfully.

## Table 3.

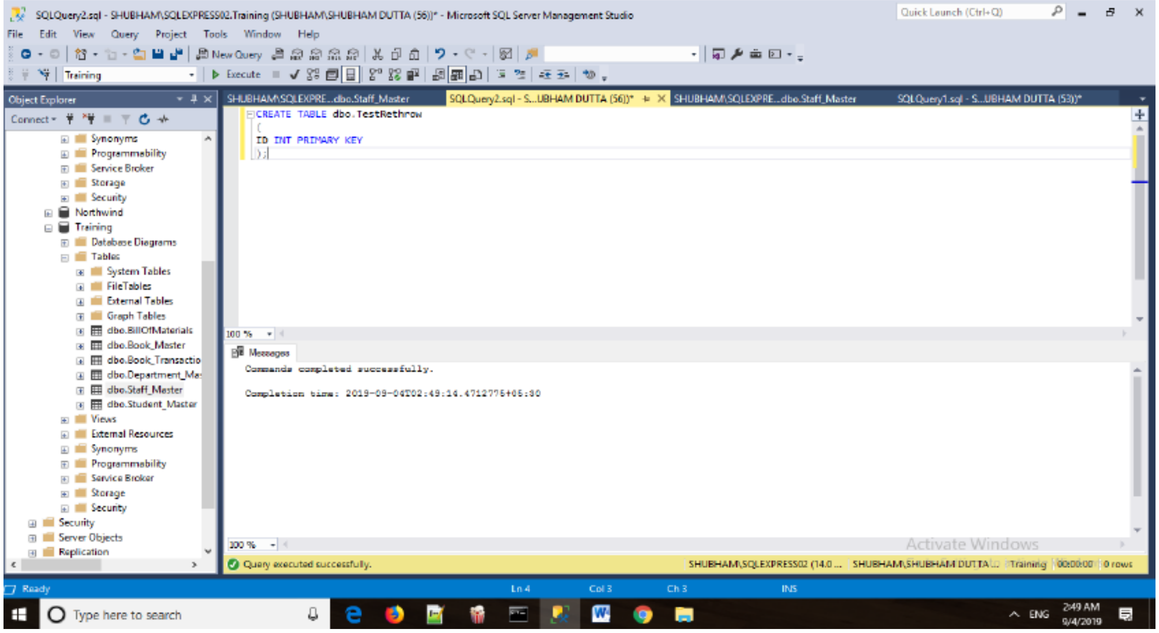


```
CREATE TABLE Contractors
(
ContractorId INT NOT NULL PRIMARY KEY,

Name NVARCHAR(255) NULL

);
```

```
Commands completed successfully.

Completion time: 2019-09-04T02:47:28.1410891+05:30
```

Query executed successfully.

## Table 4.

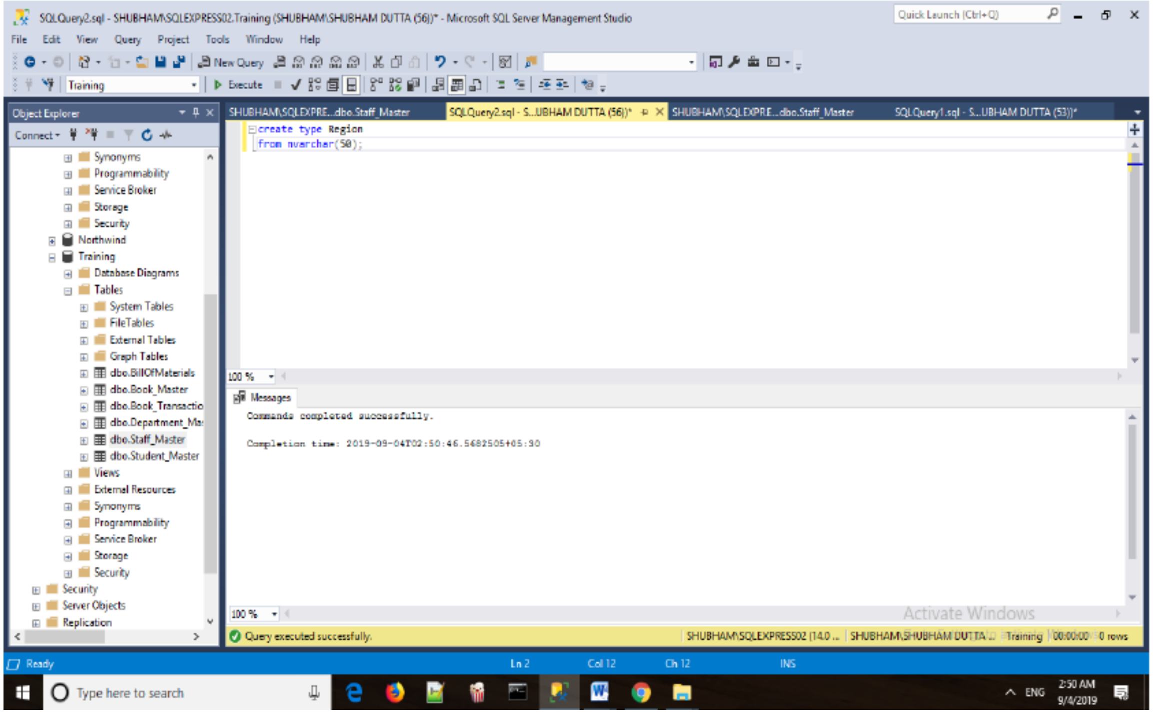


```
CREATE TABLE dbo.TestRethrow
(
ID INT PRIMARY KEY
);
```

```
Commands completed successfully.

Completion time: 2019-09-04T02:49:14.4712775+05:30
```

Query executed successfully.

## 1.

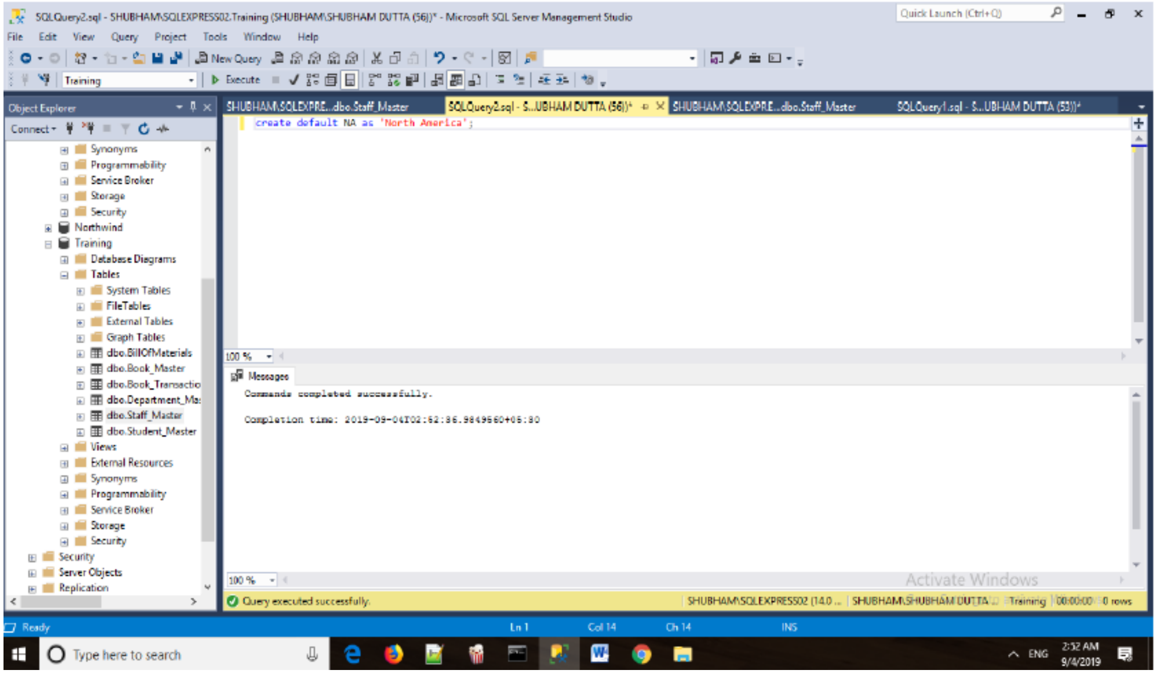


```
create type Region
from nvarchar(50);
```

```
Commands completed successfully.

Completion time: 2019-09-04T02:50:46.5682505+05:30
```

Query executed successfully.

## 2.

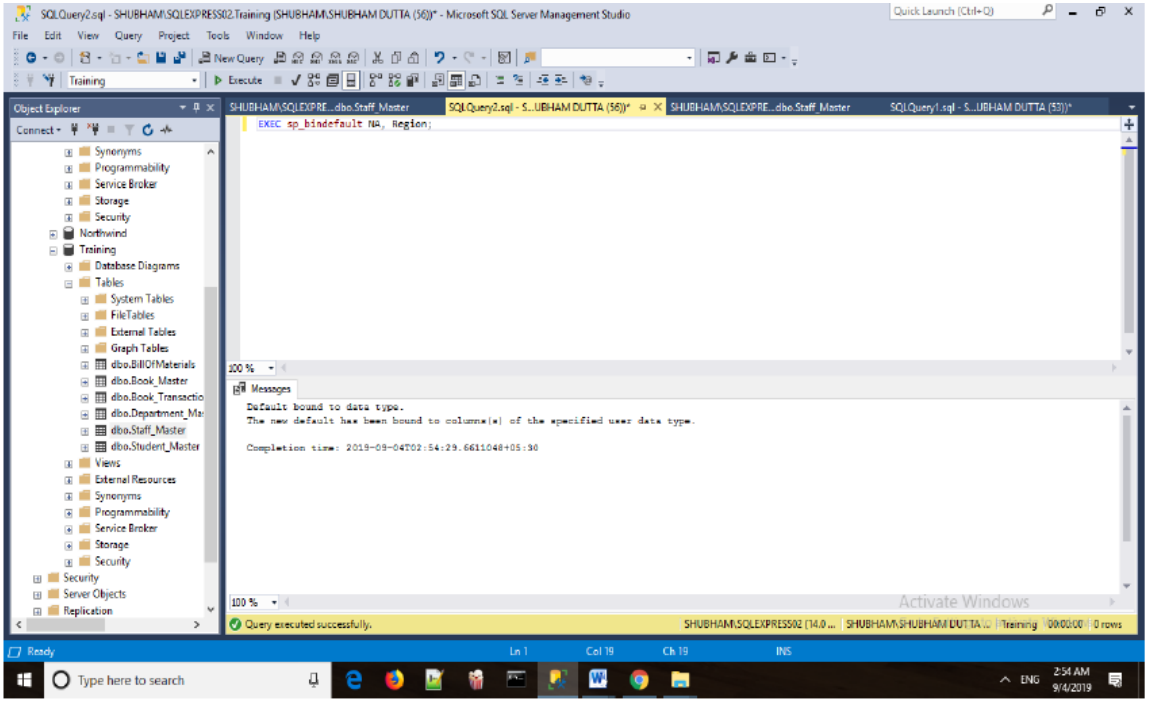


```
create default NA as 'North America';
```

```
Commands completed successfully.

Completion time: 2019-09-04T02:52:36.9849560+05:30
```

Query executed successfully.

## 3.

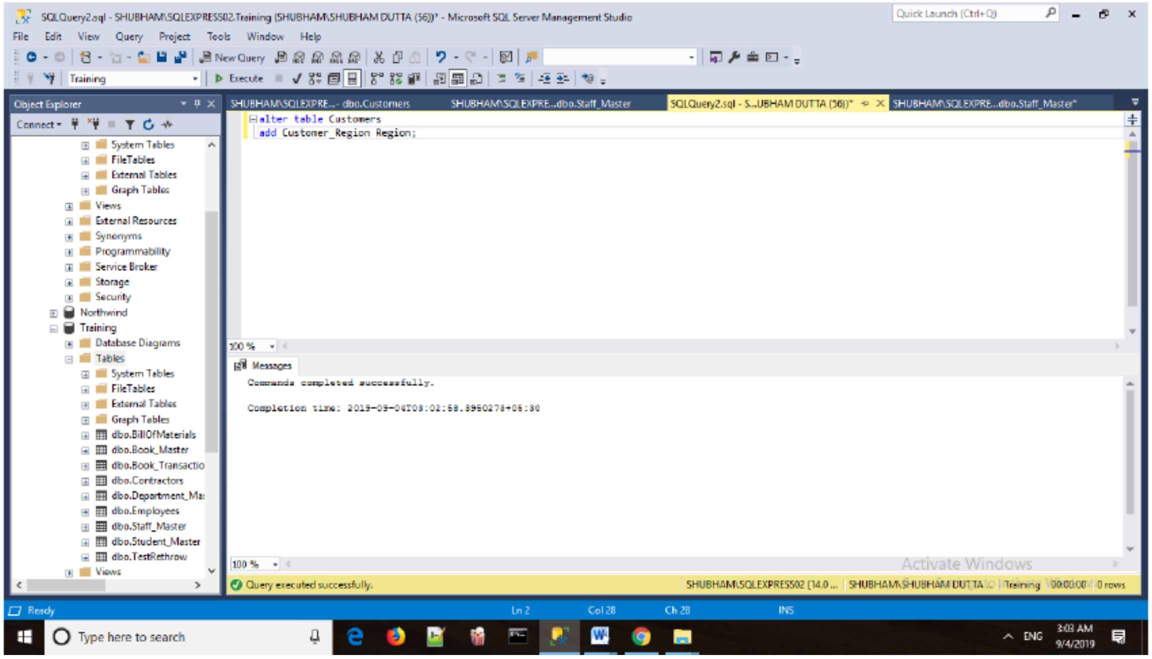

SQLQuery2.sql - SHUBHAM\SQLEXPRESS02.Training (SHUBHAM\SHUBHAM DUTTA (56))* - Microsoft SQL Server Management Studio

```
EXEC sp_bindefault NA, Region;
```

```
Default bound to data type.
The new default has been bound to column(s) of the specified user data type.

Completion time: 2019-09-04T02:54:29.6611048+05:30
```

Query executed successfully. SHUBHAM\SQLEXPRESS02 (14.0 ... SHUBHAM\SHUBHAM DUTTA ... Training 00:00:00 0 rows

## 4.

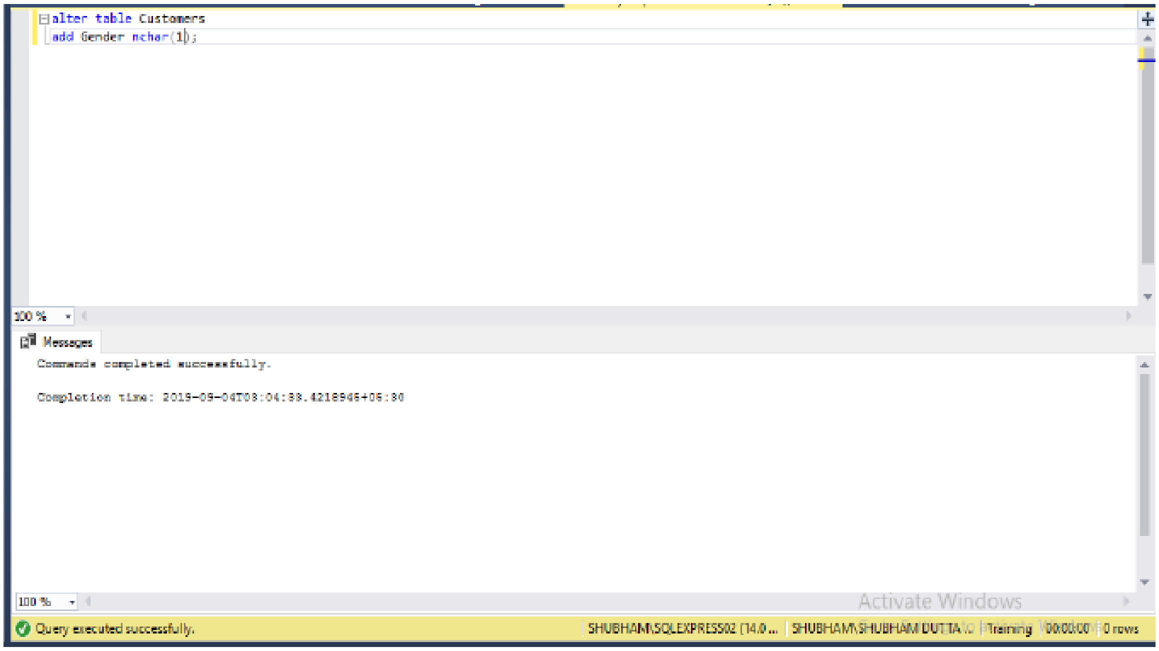

SQLQuery2.sql - SHUBHAM\SQLEXPRESS02.Training (SHUBHAM\SHUBHAM DUTTA (56))* - Microsoft SQL Server Management Studio

```
alter table Customers
add Customer_Region Region;
```

```
Commands completed successfully.

Completion time: 2019-09-04T03:02:58.8960278+05:30
```

Query executed successfully. SHUBHAM\SQLEXPRESS02 (14.0 ... SHUBHAM\SHUBHAM DUTTA ... Training 00:00:00 0 rows

## 5.

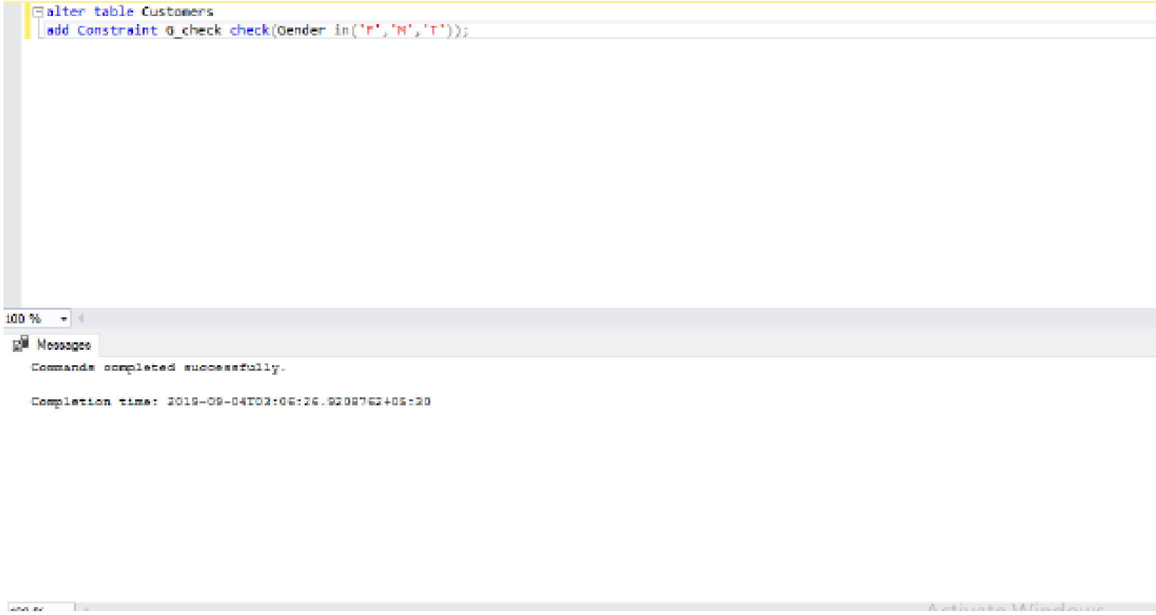


```
alter table Customers
add Gender nchar(1);
```

```
Commands completed successfully.

Completion time: 2019-09-04T03:04:38.4218946+05:30
```

100 %
Query executed successfully.
SHUBHAM\SQLEXPRESS02 (14.0 ...
SHUBHAM\SHUBHAM DUTTA ...
Training
00:00:00
0 rows

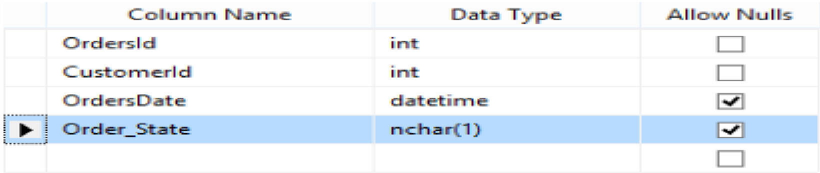
## 6.



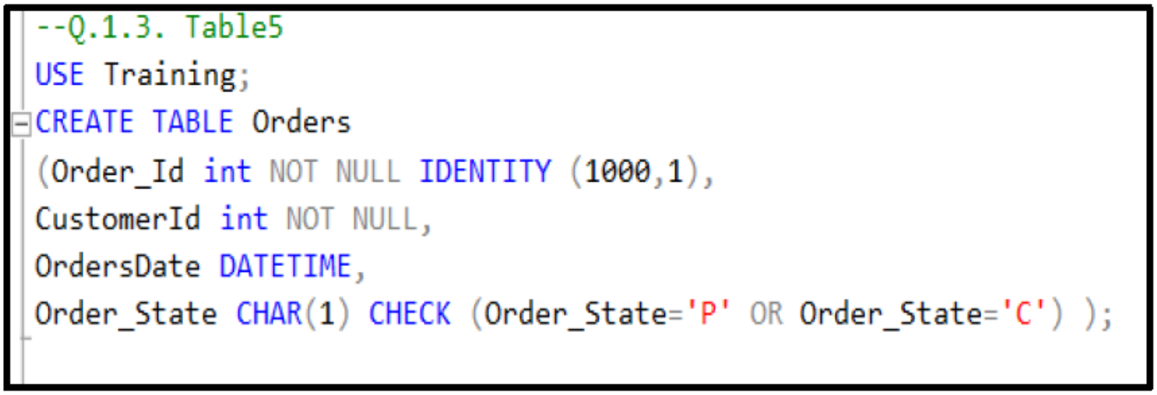
```
alter table Customers
add Constraint G_check check(Gender in('F','M','T'));
```

```
Commands completed successfully.

Completion time: 2019-09-04T03:06:26.9208762+05:30
```

## Orders Table :

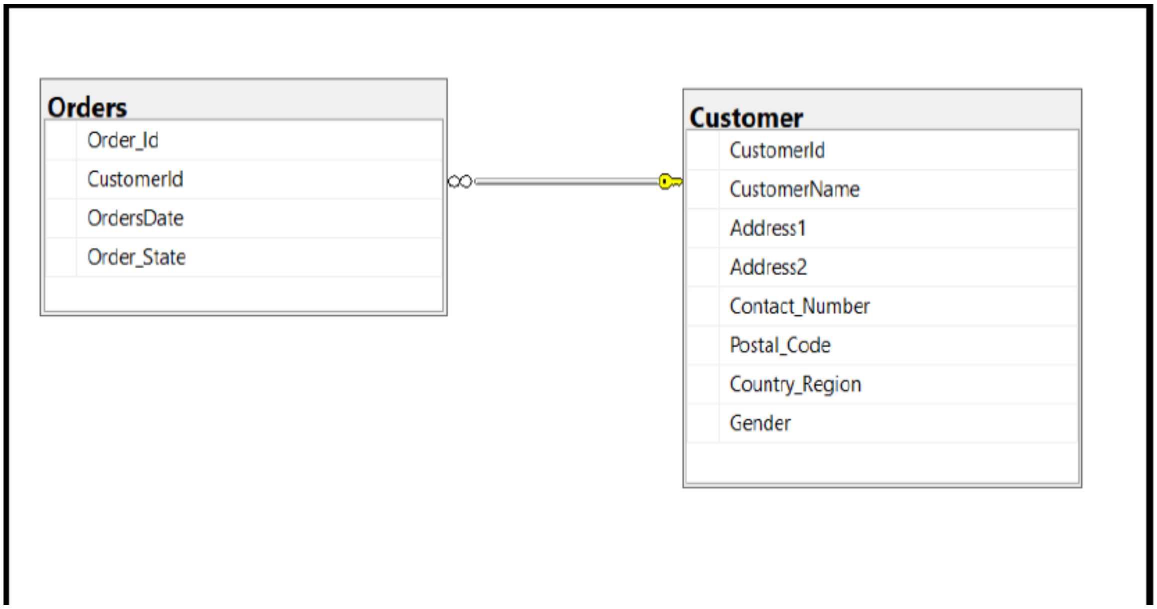


|  | Column Name | Data Type | Allow Nulls |
|---|---|---|---|
|  | OrdersId | int | □ |
|  | CustomerId | int | □ |
|  | OrdersDate | datetime | ☑ |
| ▶ | Order_State | nchar(1) | ☑ |
|  |  |  | □ |



```
--Q.1.3. Table5
USE Training;
CREATE TABLE Orders
(Order_Id int NOT NULL IDENTITY (1000,1),
CustomerId int NOT NULL,
OrdersDate DATETIME,
Order_State CHAR(1) CHECK (Order_State='P' OR Order_State='C') );
```

7.

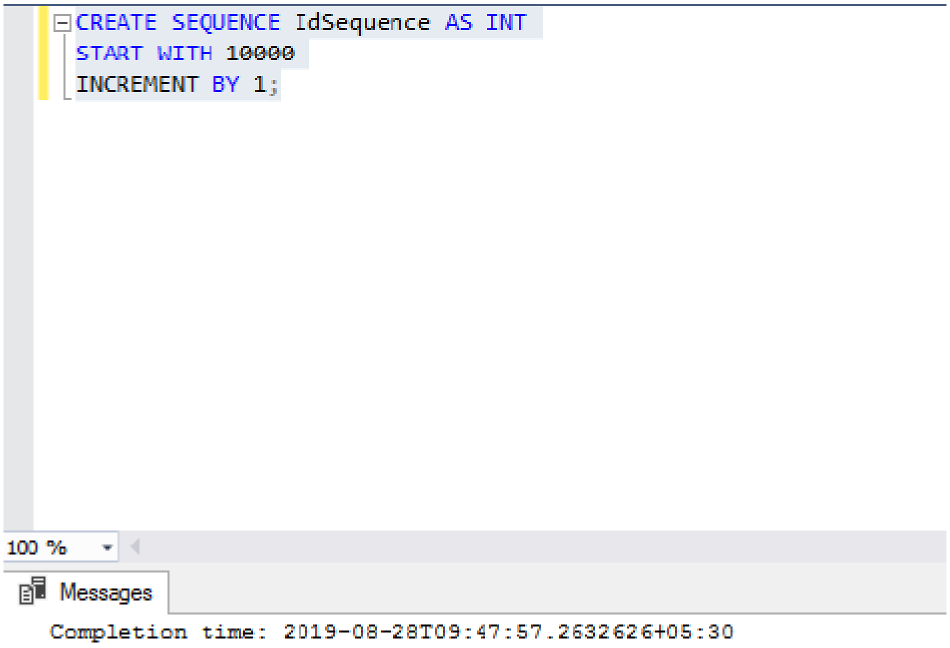


**Orders**
- Order_Id
- CustomerId
- OrdersDate
- Order_State

**Customer**
- CustomerId
- CustomerName
- Address1
- Address2
- Contact_Number
- Postal_Code
- Country_Region
- Gender

## 8. Creating and using Sequence Numbers

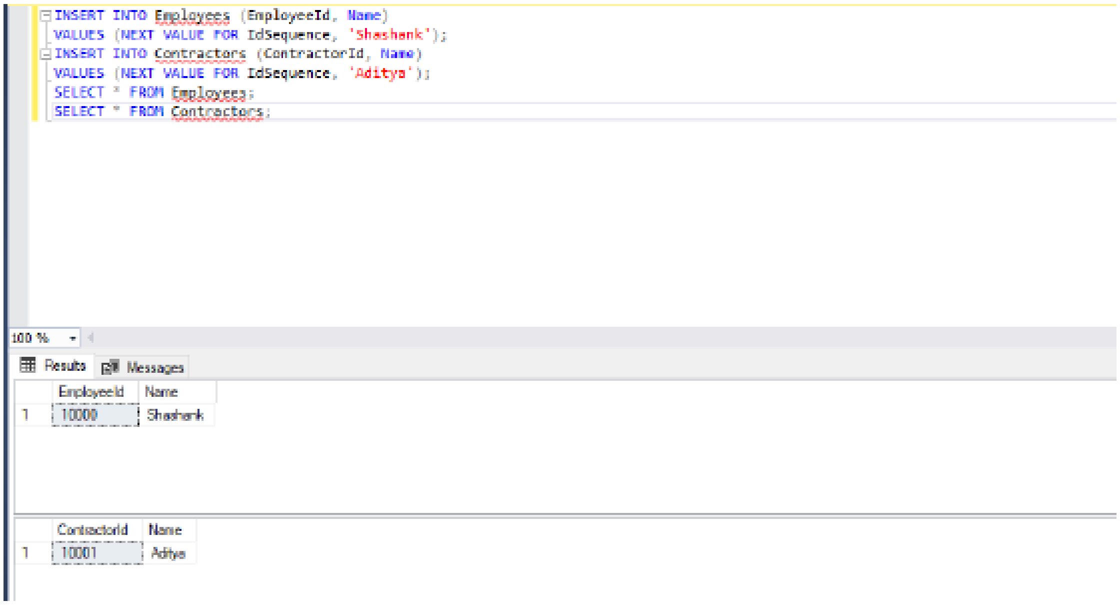
### Task 1: Creating the Sequence



```
CREATE SEQUENCE IdSequence AS INT
START WITH 10000
INCREMENT BY 1;
```

```
Completion time: 2019-08-28T09:47:57.2632626+05:30
```

### Task 2: Using the Sequence to Insert New Rows



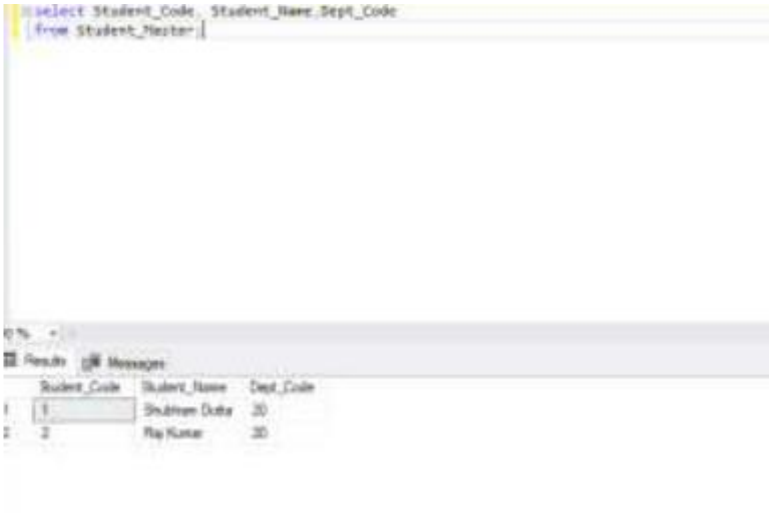
```
INSERT INTO Employees (EmployeeId, Name)
VALUES (NEXT VALUE FOR IdSequence, 'Shashank');
INSERT INTO Contractors (ContractorId, Name)
VALUES (NEXT VALUE FOR IdSequence, 'Aditya');
SELECT * FROM Employees;
SELECT * FROM Contractors;
```

|  | EmployeeId | Name |
|---|---|---|
| 1 | 10000 | Shashank |

|  | ContractorId | Name |
|---|---|---|
| 1 | 10001 | Aditya |

# 1.4 Simple Queries &amp; Merge Statement

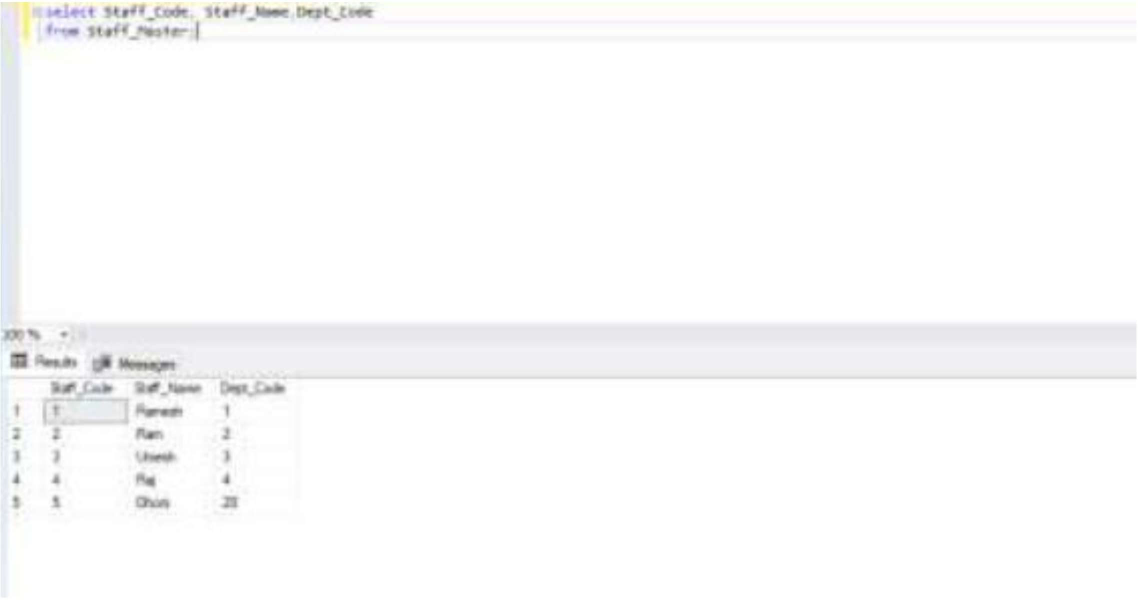
**1.**



```
select Student_Code, Student_Name,Dept_Code
from Student_Master;
```

```
   Student_Code  Student_Name   Dept_Code
1  1             Shubham Dutta  20
2  2             Raj Kumar      20
```

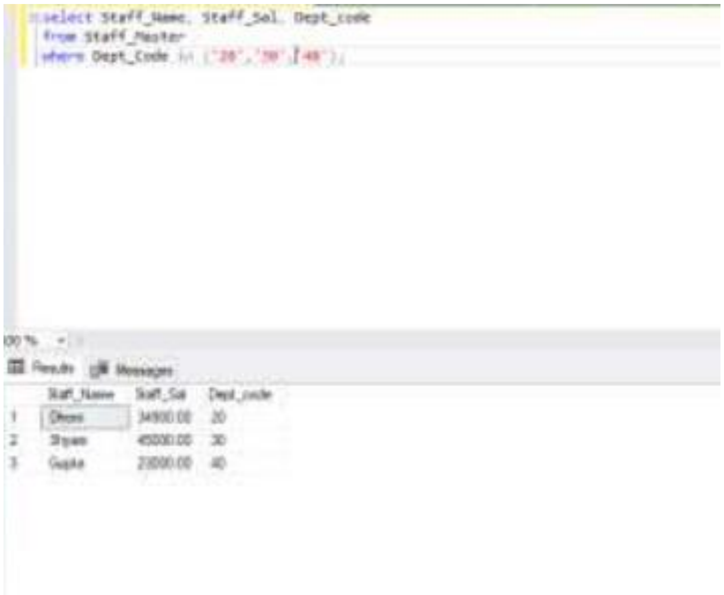
**2.**



```
select Staff_Code, Staff_Name,Dept_Code
from Staff_Master;
```

```
   Staff_Code  Staff_Name  Dept_Code
1  1           Ramesh      1
2  2           Ram         2
3  3           Umesh       3
4  4           Raj         4
5  5           Dhoni       20
```

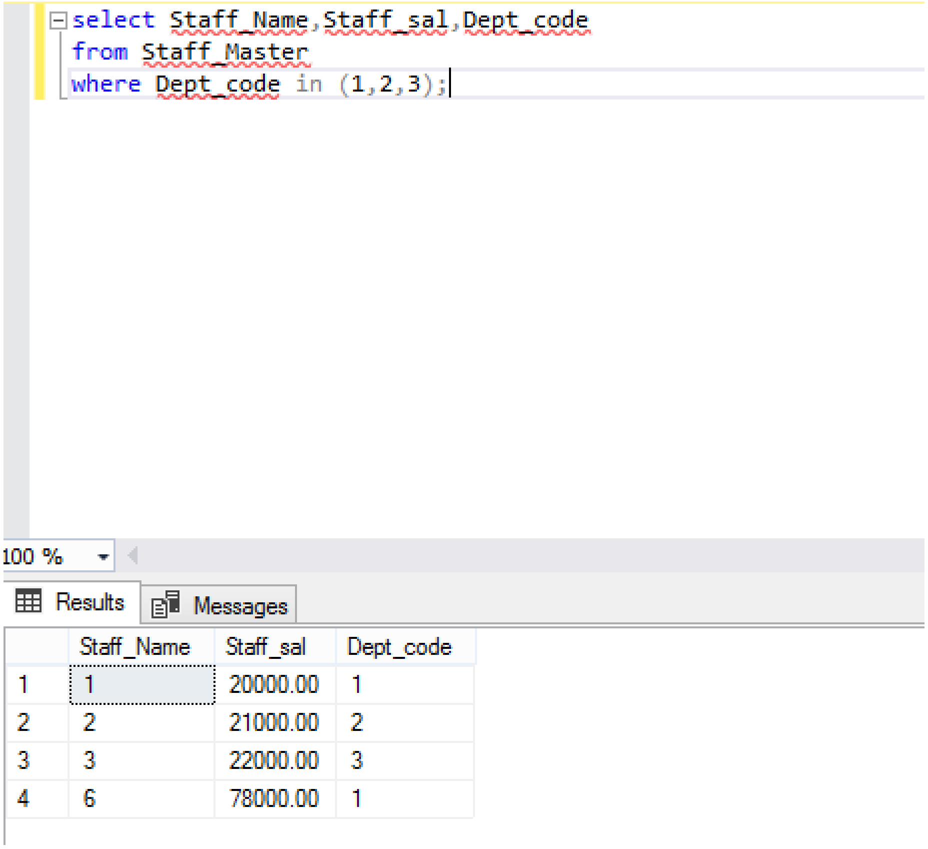
**3.**



```
select Staff_Name, Staff_Sal, Dept_code
from Staff_Master
where Dept_Code in ('20','30','40');
```

```
   Staff_Name  Staff_Sal  Dept_code
1  Dhoni       34900.00   20
2  Shyam       45000.00   30
3  Gupta       23000.00   40
```

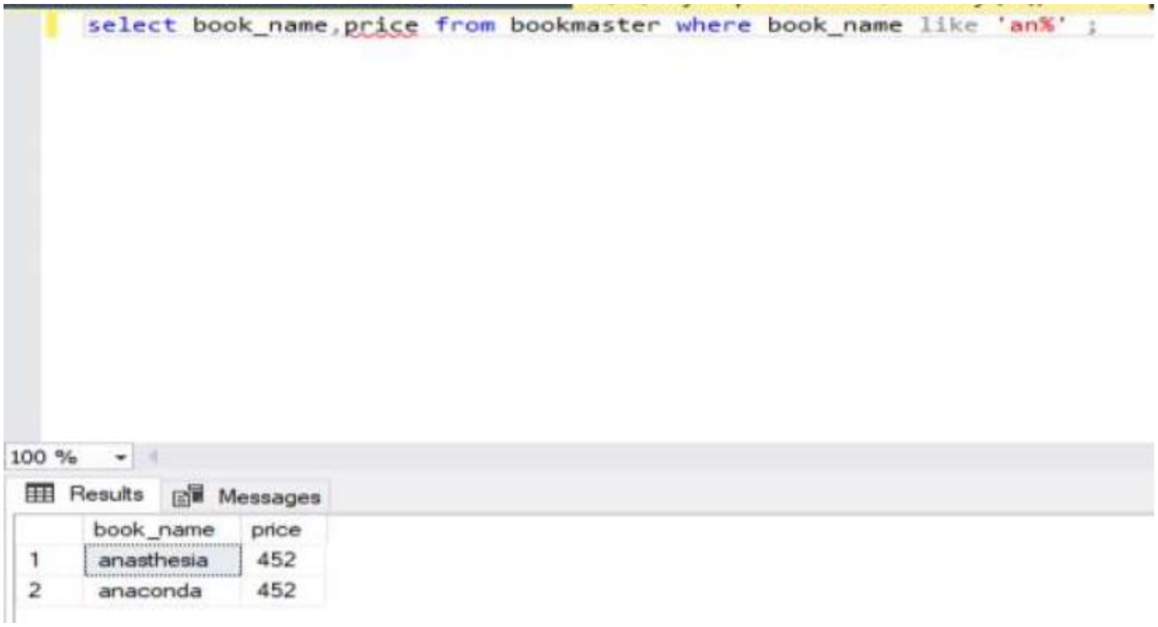
**4.**



```sql
select Staff_Name,Staff_sal,Dept_code
from Staff_Master
where Dept_code in (1,2,3);
```

| | Staff_Name | Staff_sal | Dept_code |
|---|---|---|---|
| 1 | 1 | 20000.00 | 1 |
| 2 | 2 | 21000.00 | 2 |
| 3 | 3 | 22000.00 | 3 |
| 4 | 6 | 78000.00 | 1 |

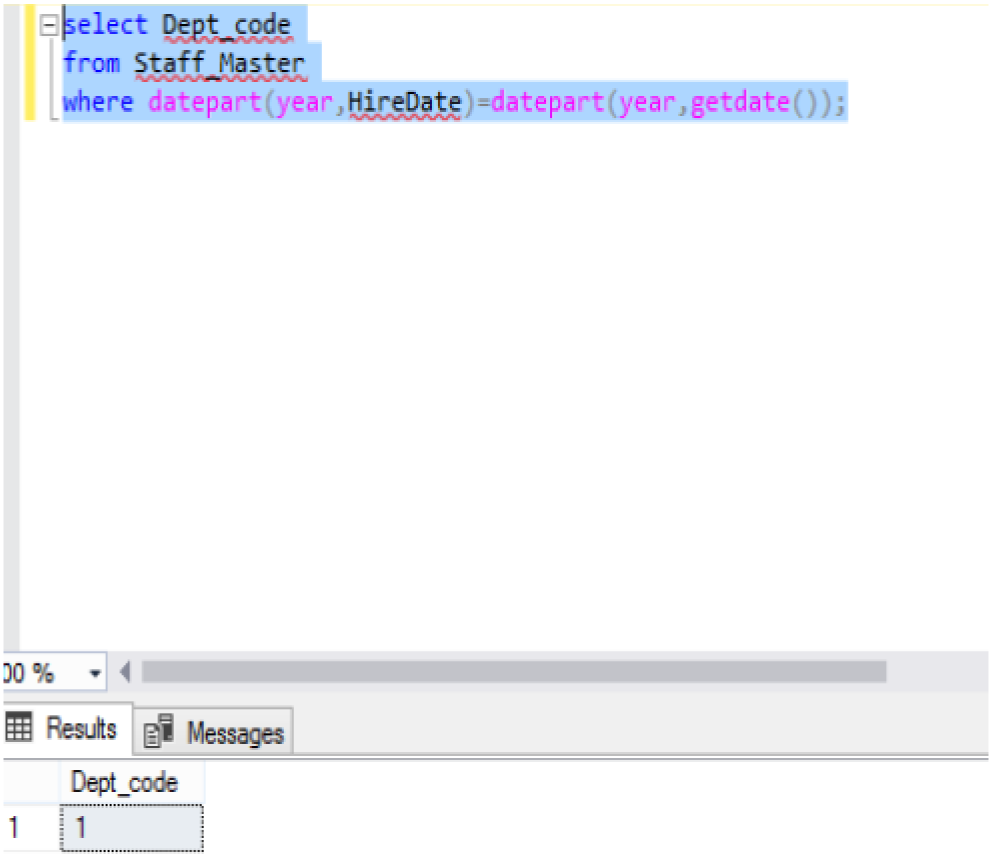
## 5.



```sql
select book_name,price from bookmaster where book_name like 'an%' ;
```

| | book_name | price |
|---|---|---|
| 1 | anasthesia | 452 |
| 2 | anaconda | 452 |

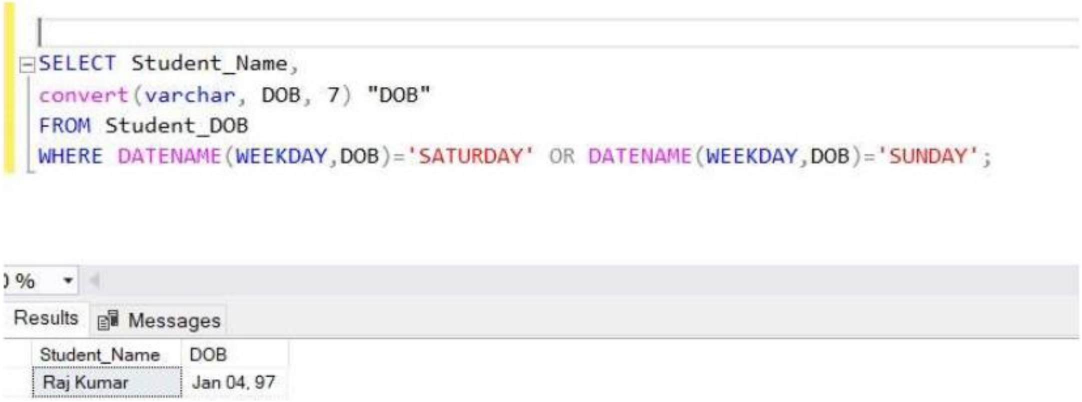
**6.**



```
select Dept_code
from Staff_Master
where datepart(year,HireDate)=datepart(year,getdate());
```

```
   Dept_code
1  1
```

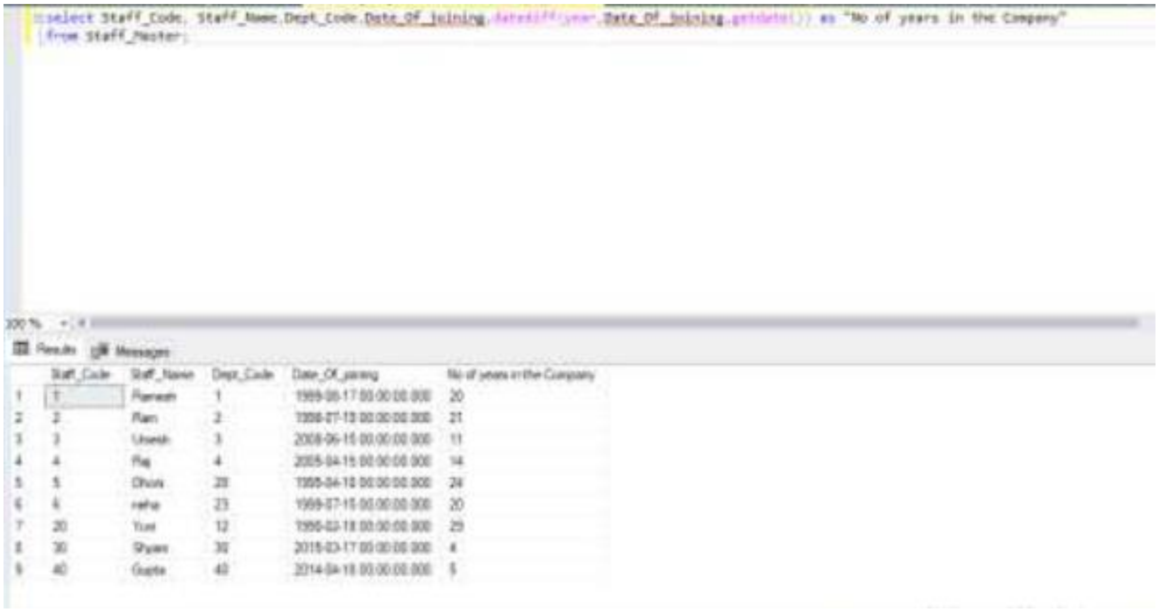
**7.**



```
SELECT Student_Name,
convert(varchar, DOB, 7) "DOB"
FROM Student_DOB
WHERE DATENAME(WEEKDAY,DOB)='SATURDAY' OR DATENAME(WEEKDAY,DOB)='SUNDAY';
```

```
Student_Name  DOB
Raj Kumar     Jan 04, 97
```

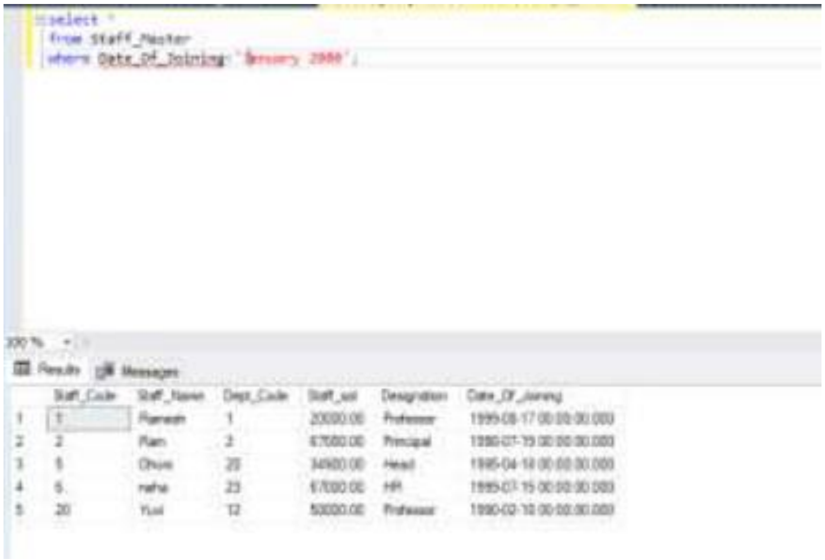
**8.**



```sql
select Staff_Code, Staff_Name,Dept_Code,Date_Of_Joining,datediff(year,Date_Of_Joining,getdate()) as "No of years in the Company"
from Staff_Master;
```

| | Staff_Code | Staff_Name | Dept_Code | Date_Of_Joining | No of years in the Company |
|---|---|---|---|---|---|
| 1 | 1 | Ramesh | 1 | 1999-08-17 00:00:00.000 | 20 |
| 2 | 2 | Ram | 2 | 1998-07-13 00:00:00.000 | 21 |
| 3 | 3 | Umesh | 3 | 2008-06-15 00:00:00.000 | 11 |
| 4 | 4 | Raj | 4 | 2005-04-15 00:00:00.000 | 14 |
| 5 | 5 | Dhruv | 20 | 1995-04-18 00:00:00.000 | 24 |
| 6 | 6 | neha | 23 | 1999-07-15 00:00:00.000 | 20 |
| 7 | 20 | Yuvi | 12 | 1990-02-18 00:00:00.000 | 29 |
| 8 | 30 | Shyam | 30 | 2015-03-17 00:00:00.000 | 4 |
| 9 | 40 | Gupta | 40 | 2014-04-18 00:00:00.000 | 5 |

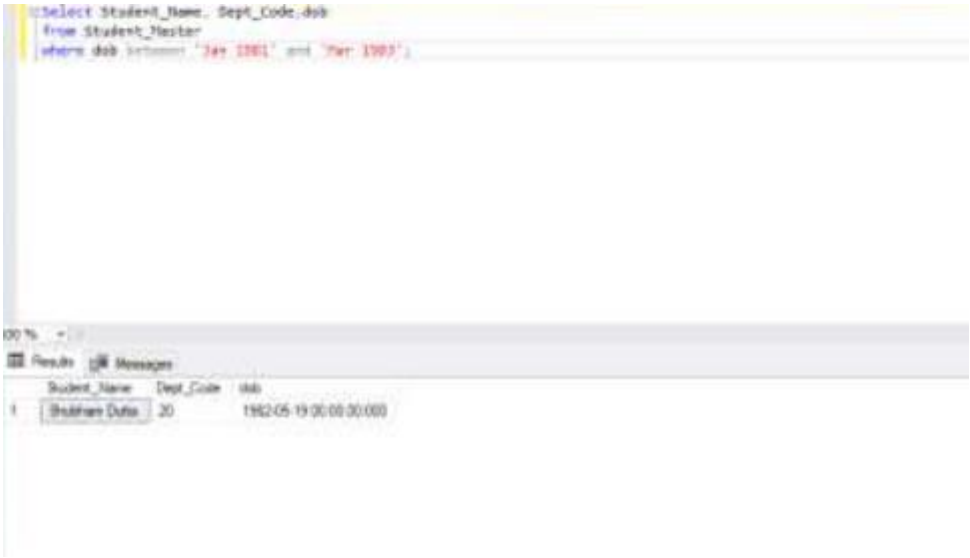
**9.**



```sql
select *
from Staff_Master
where Date_Of_Joining<'January 2000';
```

| | Staff_Code | Staff_Name | Dept_Code | Staff_sal | Designation | Date_Of_Joining |
|---|---|---|---|---|---|---|
| 1 | 1 | Ramesh | 1 | 20000.00 | Professor | 1999-08-17 00:00:00.000 |
| 2 | 2 | Ram | 2 | 67000.00 | Principal | 1998-07-13 00:00:00.000 |
| 3 | 5 | Dhruv | 20 | 34900.00 | Head | 1995-04-18 00:00:00.000 |
| 4 | 6 | neha | 23 | 67000.00 | HR | 1999-07-15 00:00:00.000 |
| 5 | 20 | Yuvi | 12 | 50000.00 | Professor | 1990-02-18 00:00:00.000 |

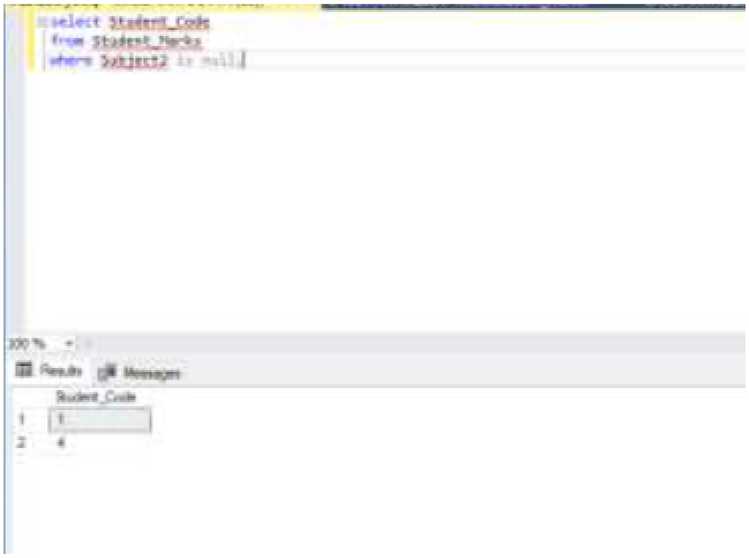
**10.**



```
Select Student_Name, Dept_Code,dob
from Student_Master
where dob between 'Jan 1981' and 'Mar 1983';
```

```
   Student_Name   Dept_Code   dob
1  Shubham Dutta  20          1982-05-19 00:00:00.000
```

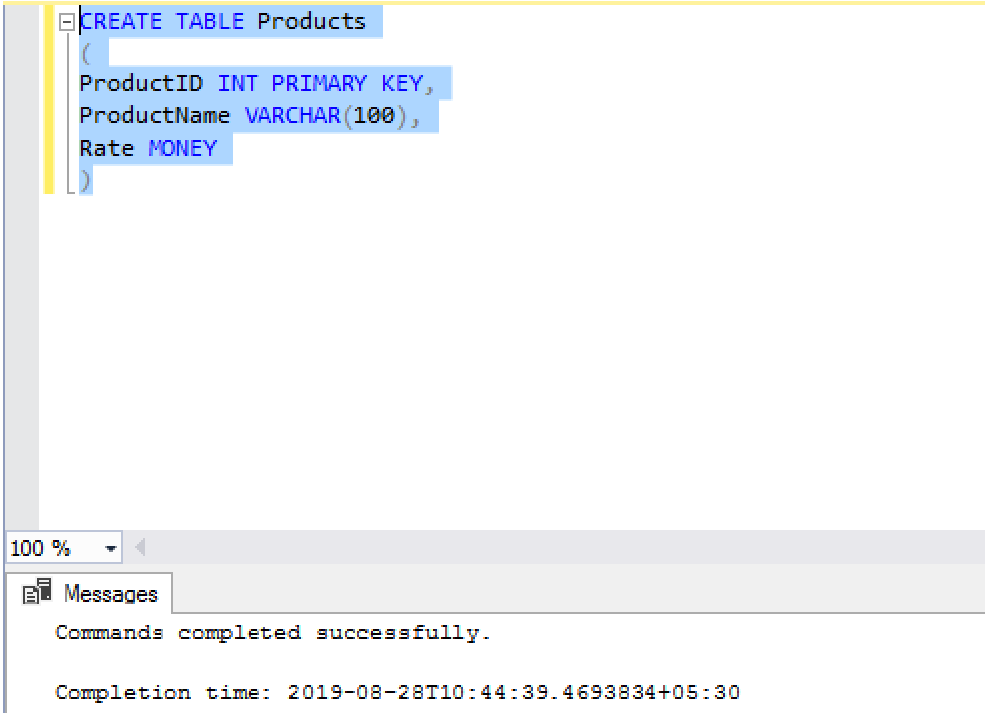
**11.**



```
select Student_Code
from Student_Marks
where Subject2 is null;
```

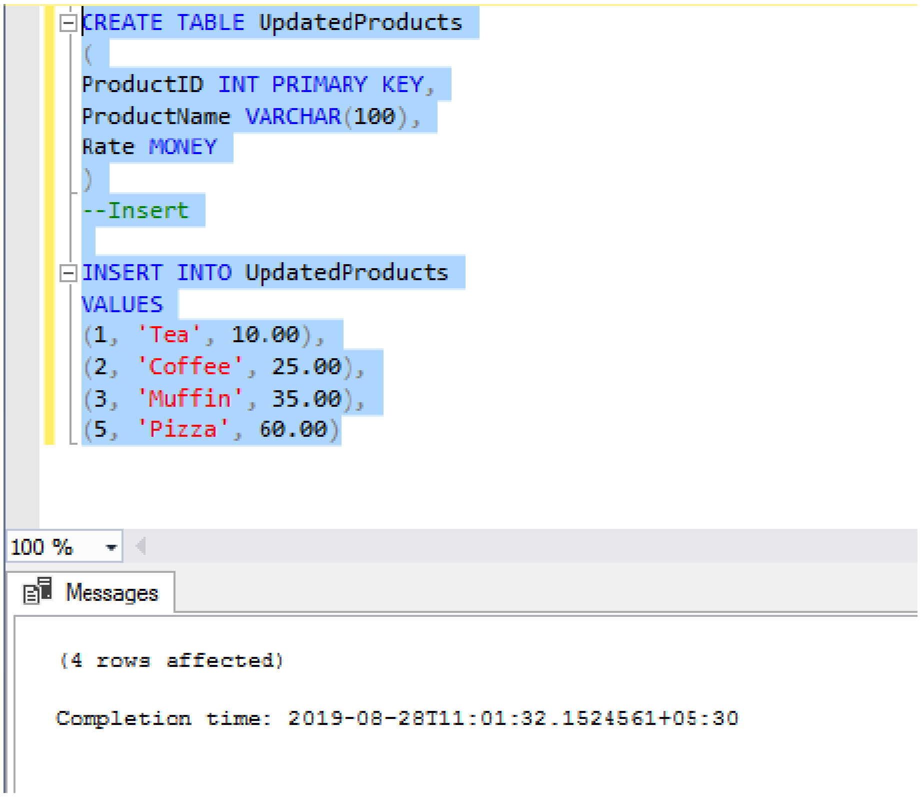
```
   Student_Code
1  1
2  4
```

## Working with Merge Statement



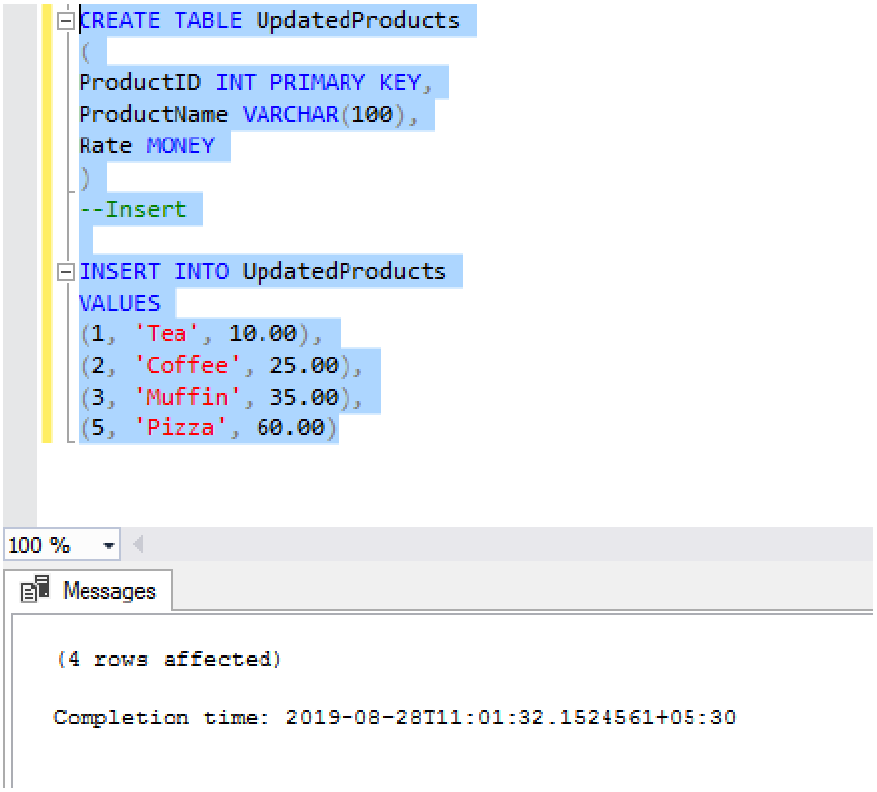
```
CREATE TABLE Products
(
ProductID INT PRIMARY KEY,
ProductName VARCHAR(100),
Rate MONEY
)
```

```
Commands completed successfully.

Completion time: 2019-08-28T10:44:39.4693834+05:30
```



```
CREATE TABLE UpdatedProducts
(
ProductID INT PRIMARY KEY,
ProductName VARCHAR(100),
Rate MONEY
)
--Insert

INSERT INTO UpdatedProducts
VALUES
(1, 'Tea', 10.00),
(2, 'Coffee', 25.00),
(3, 'Muffin', 35.00),
(5, 'Pizza', 60.00)
```

```
(4 rows affected)

Completion time: 2019-08-28T11:01:32.1524561+05:30
```

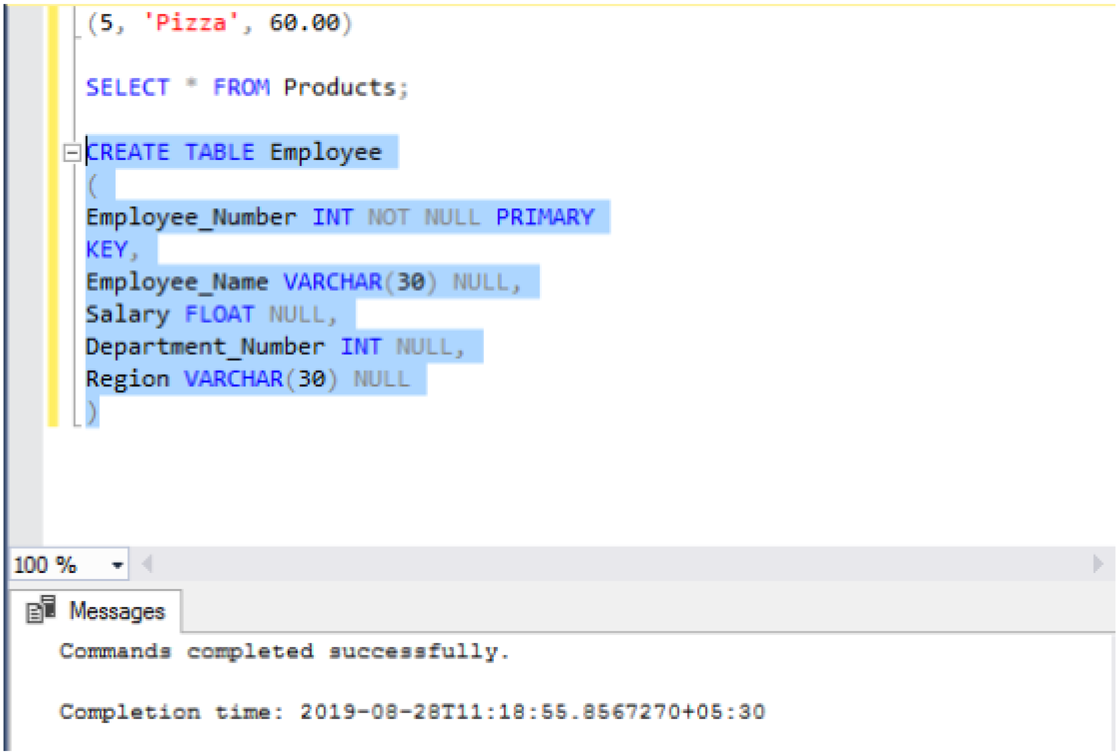


```
CREATE TABLE UpdatedProducts
(
ProductID INT PRIMARY KEY,
ProductName VARCHAR(100),
Rate MONEY
)
--Insert

INSERT INTO UpdatedProducts
VALUES
(1, 'Tea', 10.00),
(2, 'Coffee', 25.00),
(3, 'Muffin', 35.00),
(5, 'Pizza', 60.00)
```

```
(4 rows affected)

Completion time: 2019-08-28T11:01:32.1524561+05:30
```

## Working with Grouping Set

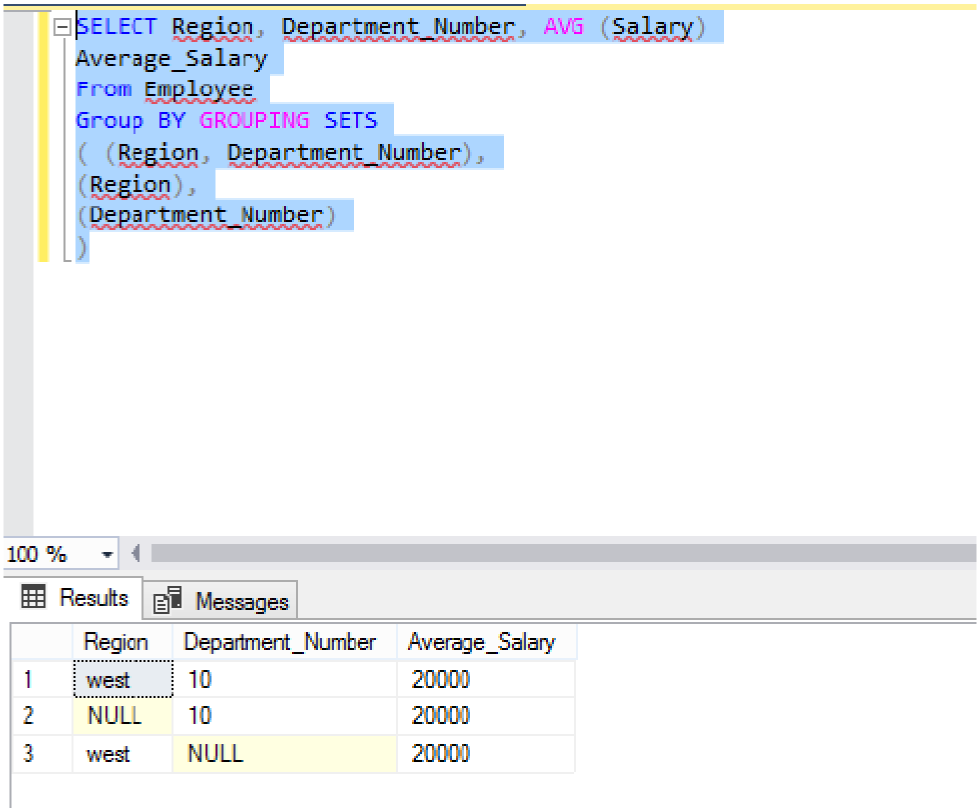
**1. Create the following table & populate with some sample data.**



```
(5, 'Pizza', 60.00)

SELECT * FROM Products;

CREATE TABLE Employee
(
Employee_Number INT NOT NULL PRIMARY
KEY,
Employee_Name VARCHAR(30) NULL,
Salary FLOAT NULL,
Department_Number INT NULL,
Region VARCHAR(30) NULL
)
```

```
Commands completed successfully.

Completion time: 2019-08-28T11:18:55.8567270+05:30
```

**2. Write following query which uses Grouping Set in the query window.**



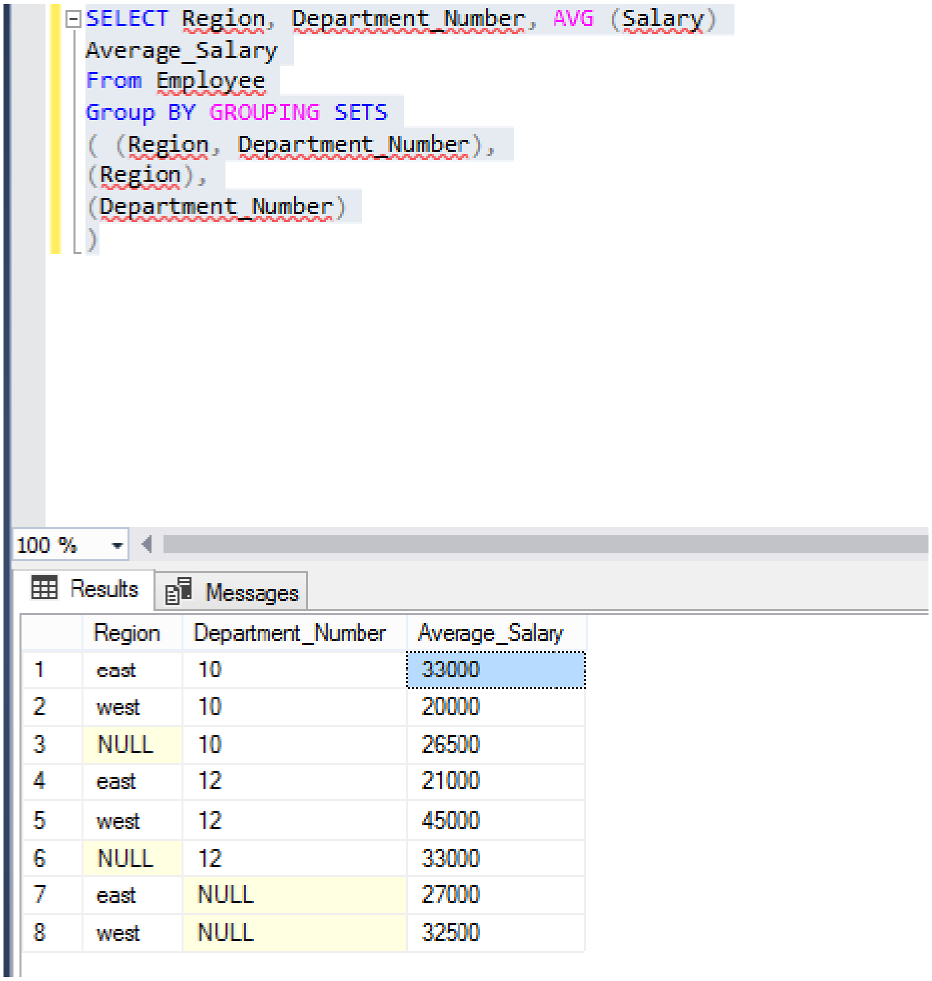
```
SELECT Region, Department_Number, AVG (Salary)
Average_Salary
From Employee
Group BY GROUPING SETS
( (Region, Department_Number),
(Region),
(Department_Number)
)
```

| | Region | Department_Number | Average_Salary |
|---|---|---|---|
| 1 | west | 10 | 20000 |
| 2 | NULL | 10 | 20000 |
| 3 | west | NULL | 20000 |

**4. The query performs following :**

**a. It generates result set grouped by each set mentioned in the Grouping Sets.**

**b. It also calculates average salary of every employee for each region and department.**

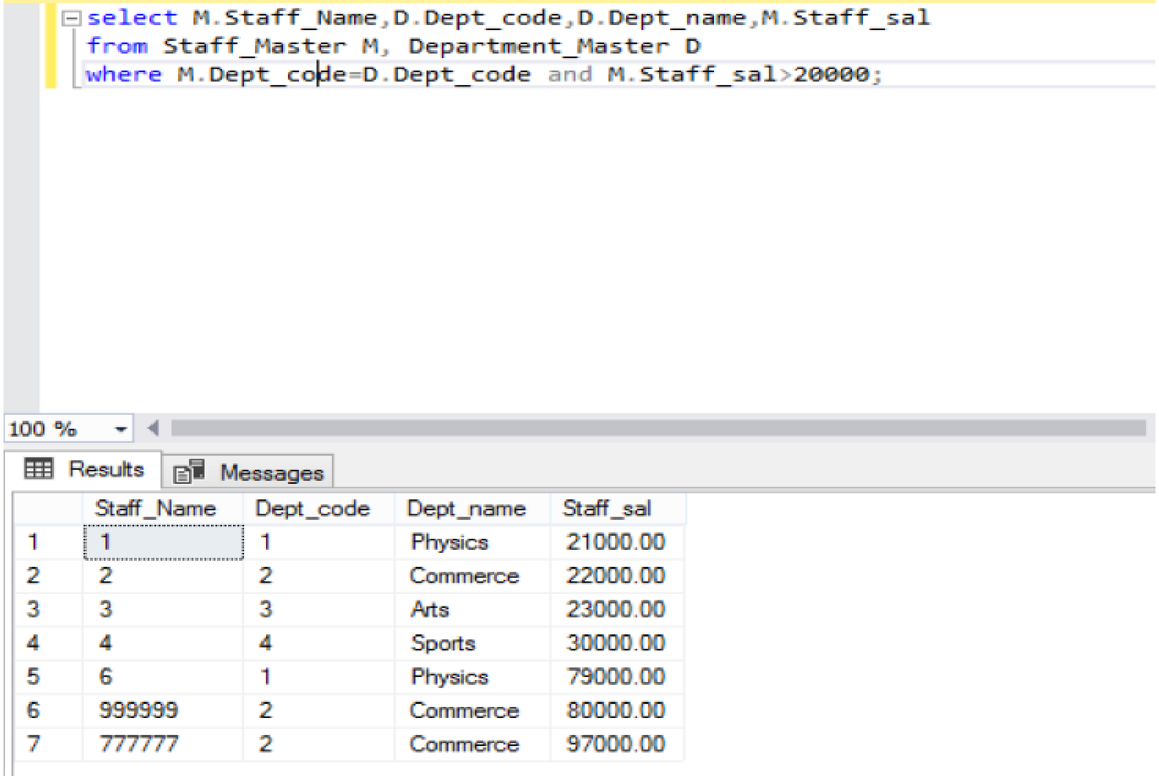


```
SELECT Region, Department_Number, AVG (Salary)
Average_Salary
From Employee
Group BY GROUPING SETS
( (Region, Department_Number),
(Region),
(Department_Number)
)
```

| | Region | Department_Number | Average_Salary |
|---|---|---|---|
| 1 | east | 10 | 33000 |
| 2 | west | 10 | 20000 |
| 3 | NULL | 10 | 26500 |
| 4 | east | 12 | 21000 |
| 5 | west | 12 | 45000 |
| 6 | NULL | 12 | 33000 |
| 7 | east | NULL | 27000 |
| 8 | west | NULL | 32500 |

## 1.5 Data Retrieval - Joins, Subqueries, SET Operators and DML

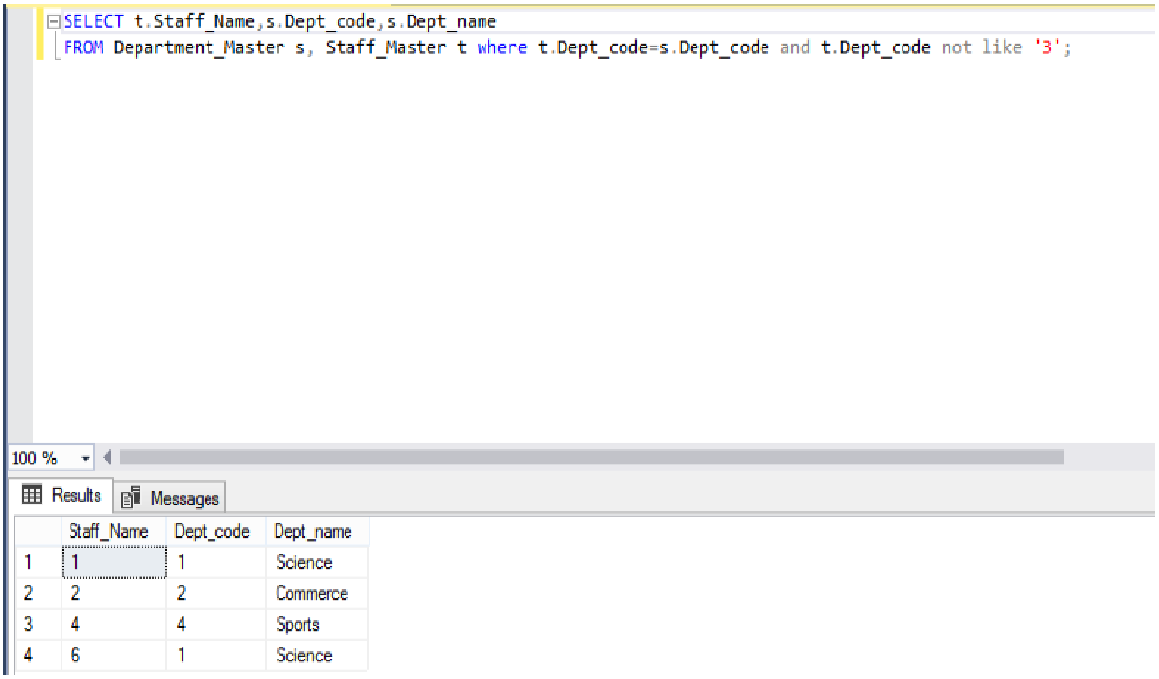
1.



```
select M.Staff_Name,D.Dept_code,D.Dept_name,M.Staff_sal
from Staff_Master M, Department_Master D
where M.Dept_code=D.Dept_code and M.Staff_sal>20000;
```

|  | Staff_Name | Dept_code | Dept_name | Staff_sal |
|---|---|---|---|---|
| 1 | 1 | 1 | Physics | 21000.00 |
| 2 | 2 | 2 | Commerce | 22000.00 |
| 3 | 3 | 3 | Arts | 23000.00 |
| 4 | 4 | 4 | Sports | 30000.00 |
| 5 | 6 | 1 | Physics | 79000.00 |
| 6 | 999999 | 2 | Commerce | 80000.00 |
| 7 | 777777 | 2 | Commerce | 97000.00 |

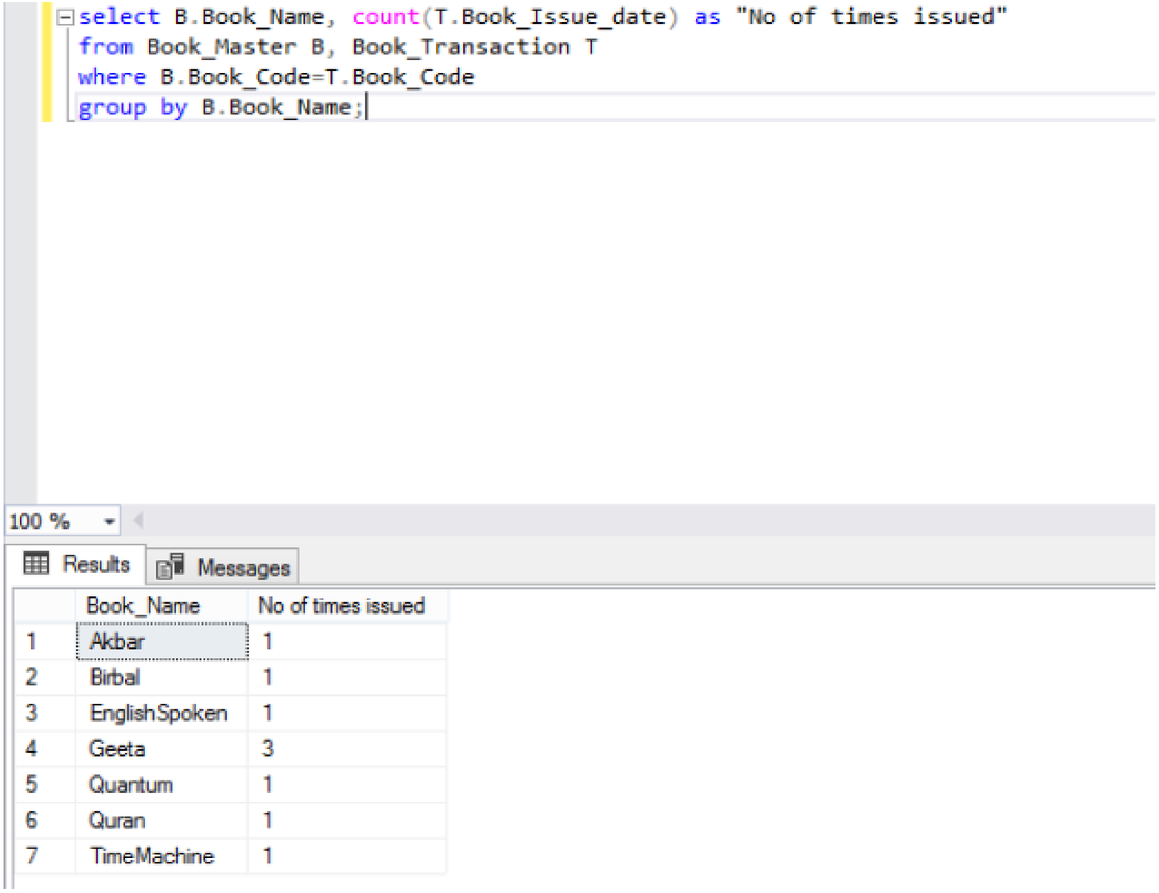
2.



```
SELECT t.Staff_Name,s.Dept_code,s.Dept_name
FROM Department_Master s, Staff_Master t where t.Dept_code=s.Dept_code and t.Dept_code not like '3';
```

|  | Staff_Name | Dept_code | Dept_name |
|---|---|---|---|
| 1 | 1 | 1 | Science |
| 2 | 2 | 2 | Commerce |
| 3 | 4 | 4 | Sports |
| 4 | 6 | 1 | Science |

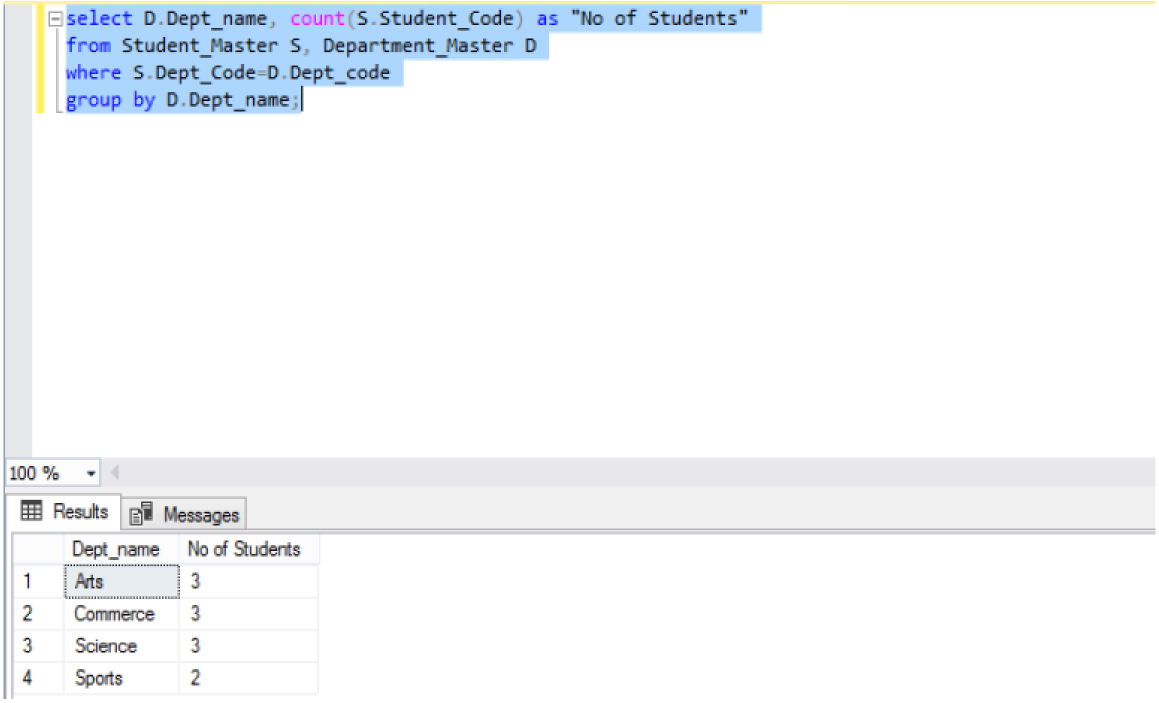
3.



```
select B.Book_Name, count(T.Book_Issue_date) as "No of times issued"
from Book_Master B, Book_Transaction T
where B.Book_Code=T.Book_Code
group by B.Book_Name;
```

|   | Book_Name | No of times issued |
|---|---|---|
| 1 | Akbar | 1 |
| 2 | Birbal | 1 |
| 3 | EnglishSpoken | 1 |
| 4 | Geeta | 3 |
| 5 | Quantum | 1 |
| 6 | Quran | 1 |
| 7 | TimeMachine | 1 |

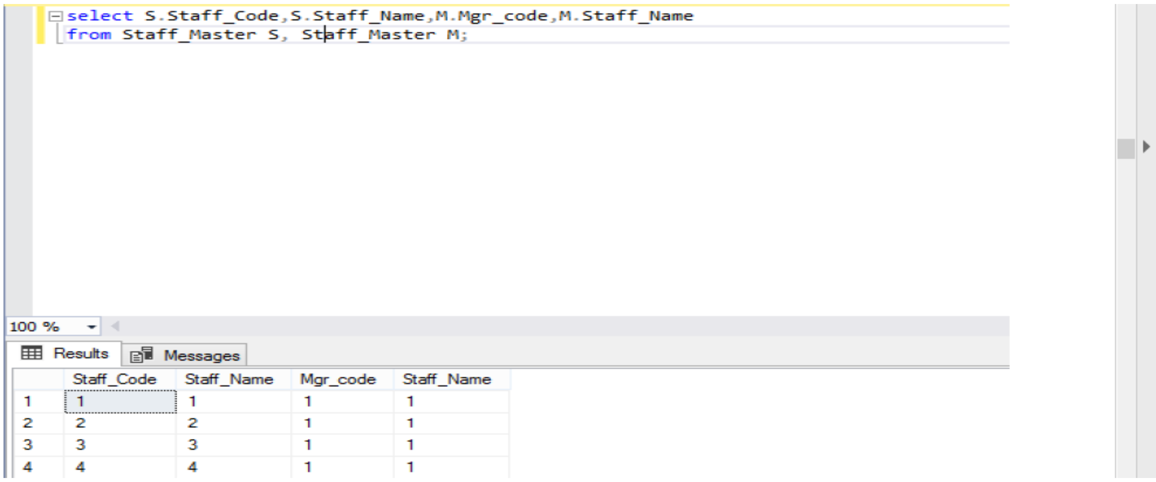
**4.**



```sql
select D.Dept_name, count(S.Student_Code) as "No of Students"
from Student_Master S, Department_Master D
where S.Dept_Code=D.Dept_code
group by D.Dept_name;
```

|   | Dept_name | No of Students |
|---|---|---|
| 1 | Arts | 3 |
| 2 | Commerce | 3 |
| 3 | Science | 3 |
| 4 | Sports | 2 |

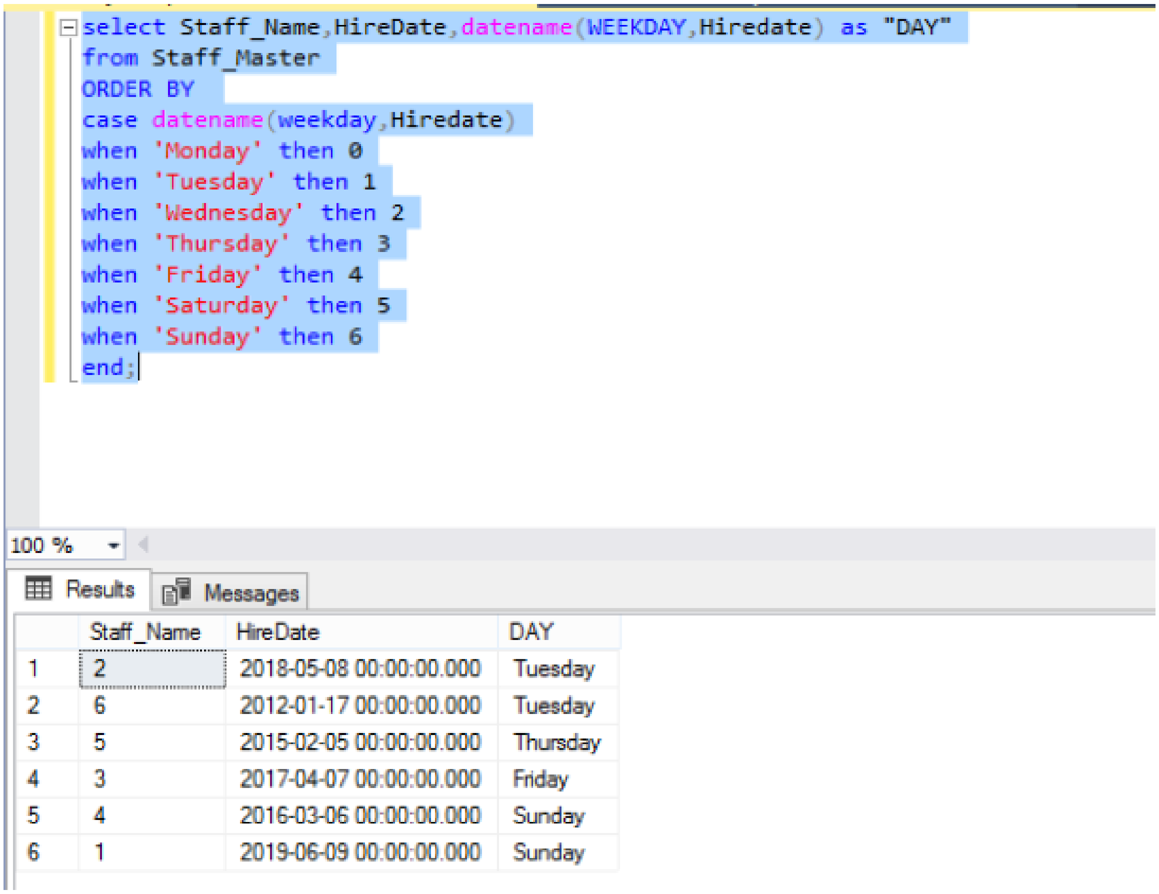
**5.**



```sql
select S.Staff_Code,S.Staff_Name,M.Mgr_code,M.Staff_Name
from Staff_Master S, Staff_Master M;
```

|   | Staff_Code | Staff_Name | Mgr_code | Staff_Name |
|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 1 | 1 |
| 3 | 3 | 3 | 1 | 1 |
| 4 | 4 | 4 | 1 | 1 |

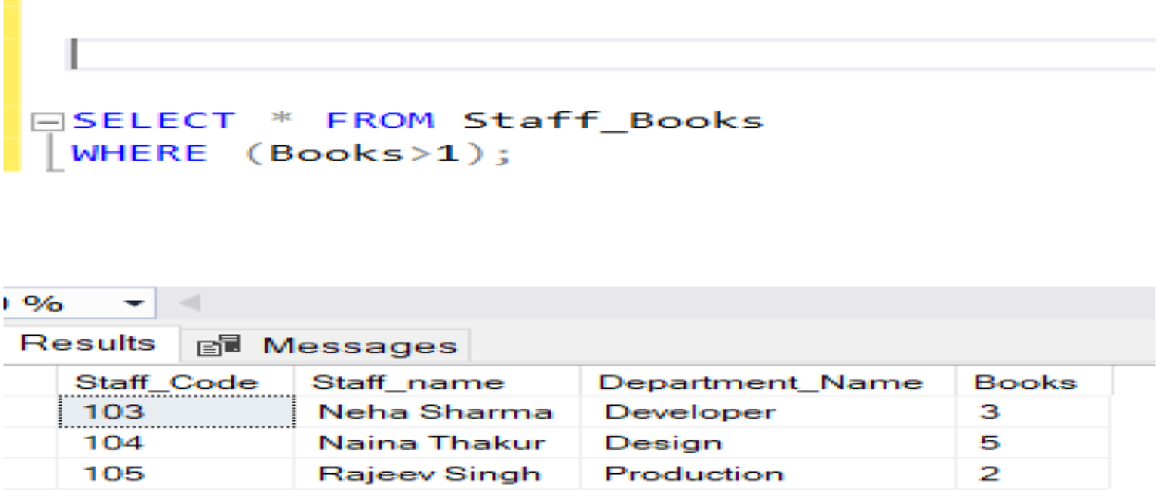
**6.**



```
select Staff_Name,HireDate,datename(WEEKDAY,Hiredate) as "DAY"
from Staff_Master
ORDER BY
case datename(weekday,Hiredate)
when 'Monday' then 0
when 'Tuesday' then 1
when 'Wednesday' then 2
when 'Thursday' then 3
when 'Friday' then 4
when 'Saturday' then 5
when 'Sunday' then 6
end;
```

| | Staff_Name | HireDate | DAY |
|---|---|---|---|
| 1 | 2 | 2018-05-08 00:00:00.000 | Tuesday |
| 2 | 6 | 2012-01-17 00:00:00.000 | Tuesday |
| 3 | 5 | 2015-02-05 00:00:00.000 | Thursday |
| 4 | 3 | 2017-04-07 00:00:00.000 | Friday |
| 5 | 4 | 2016-03-06 00:00:00.000 | Sunday |
| 6 | 1 | 2019-06-09 00:00:00.000 | Sunday |

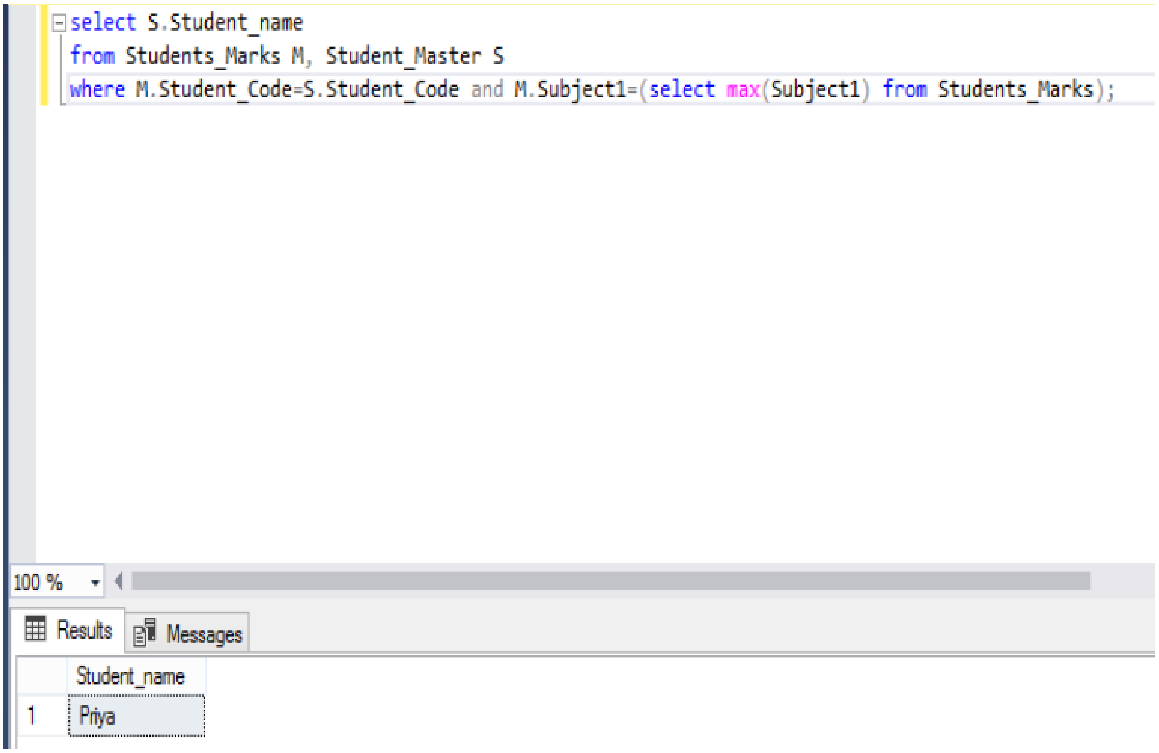
**7.**



```
SELECT * FROM Staff_Books
WHERE (Books>1);
```

| Staff_Code | Staff_name | Department_Name | Books |
|---|---|---|---|
| 103 | Neha Sharma | Developer | 3 |
| 104 | Naina Thakur | Design | 5 |
| 105 | Rajeev Singh | Production | 2 |

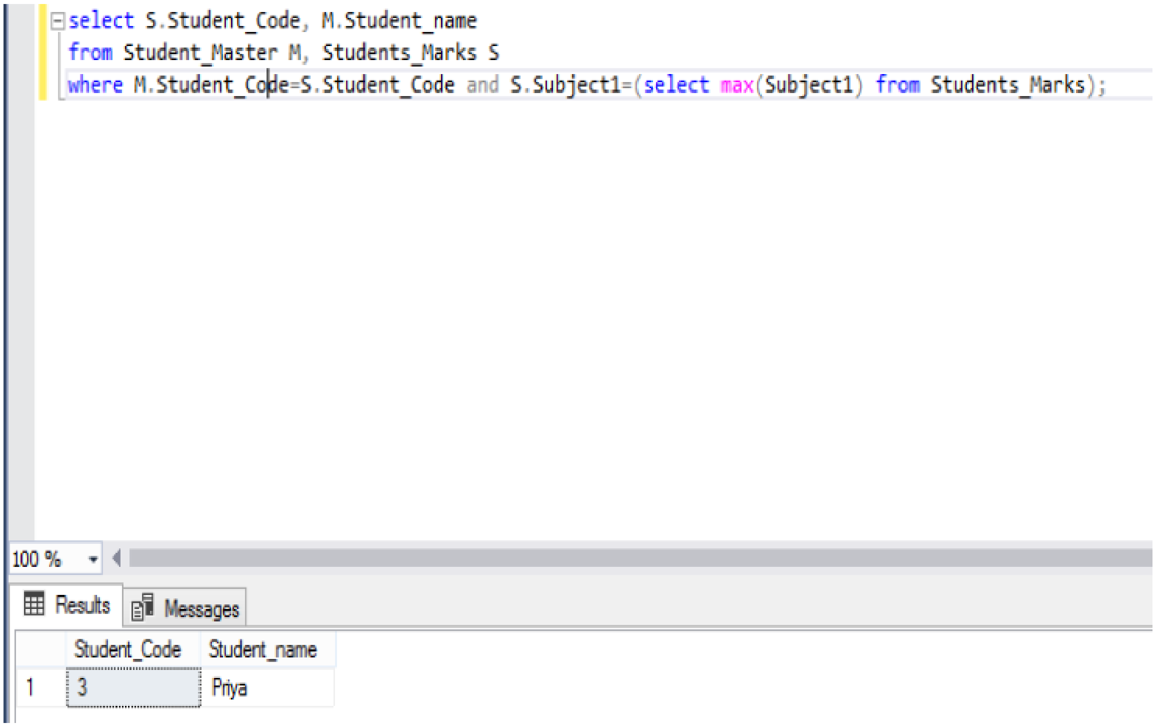
**8.**



```sql
select S.Student_name
from Students_Marks M, Student_Master S
where M.Student_Code=S.Student_Code and M.Subject1=(select max(Subject1) from Students_Marks);
```

```
   Student_name
1  Priya
```

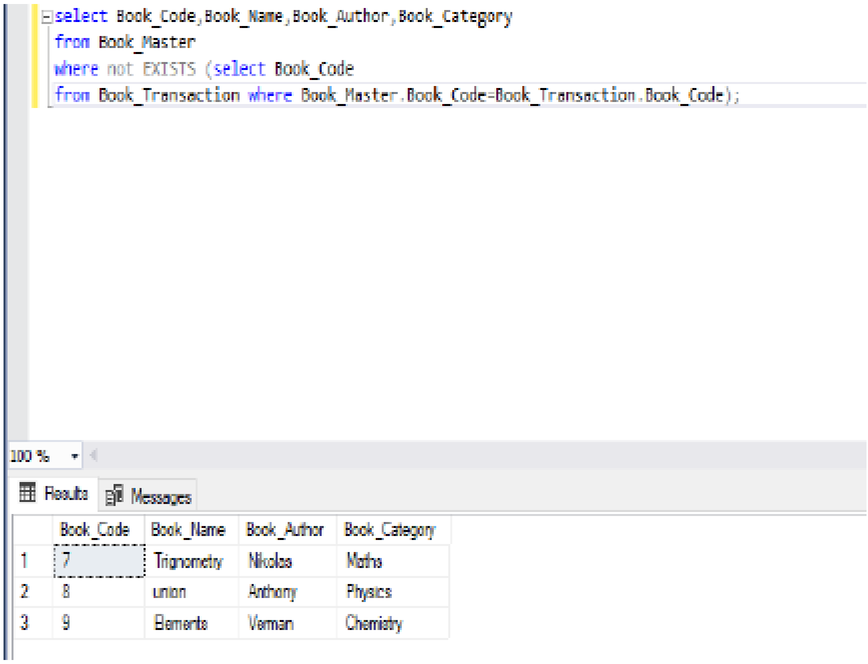
**9.**



```sql
select S.Student_Code, M.Student_name
from Student_Master M, Students_Marks S
where M.Student_Code=S.Student_Code and S.Subject1=(select max(Subject1) from Students_Marks);
```

```
   Student_Code  Student_name
1  3             Priya
```

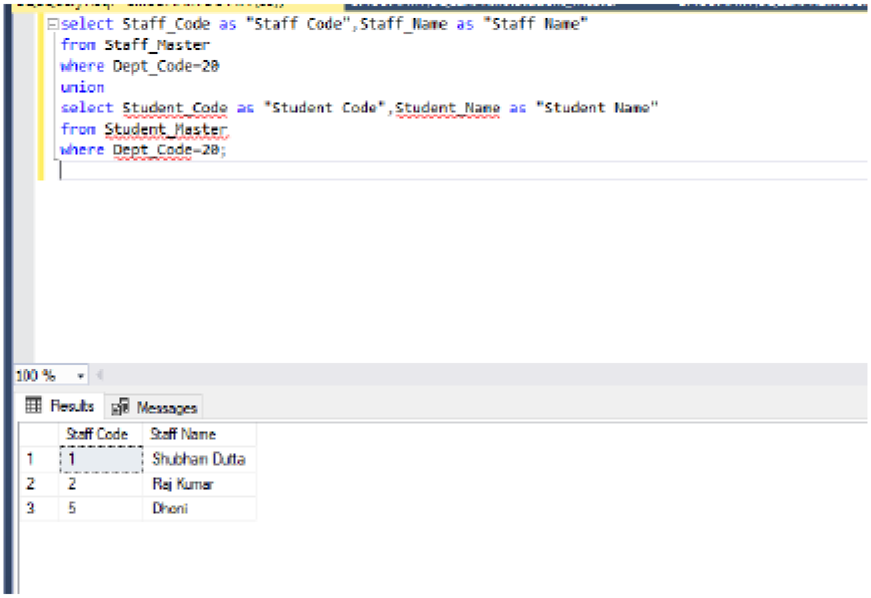
**10.**



```
select Book_Code,Book_Name,Book_Author,Book_Category
from Book_Master
where not EXISTS (select Book_Code
from Book_Transaction where Book_Master.Book_Code=Book_Transaction.Book_Code);
```

|   | Book_Code | Book_Name | Book_Author | Book_Category |
|---|---|---|---|---|
| 1 | 7 | Trignometry | Nikolas | Maths |
| 2 | 8 | union | Anthony | Physics |
| 3 | 9 | Elements | Verman | Chemistry |

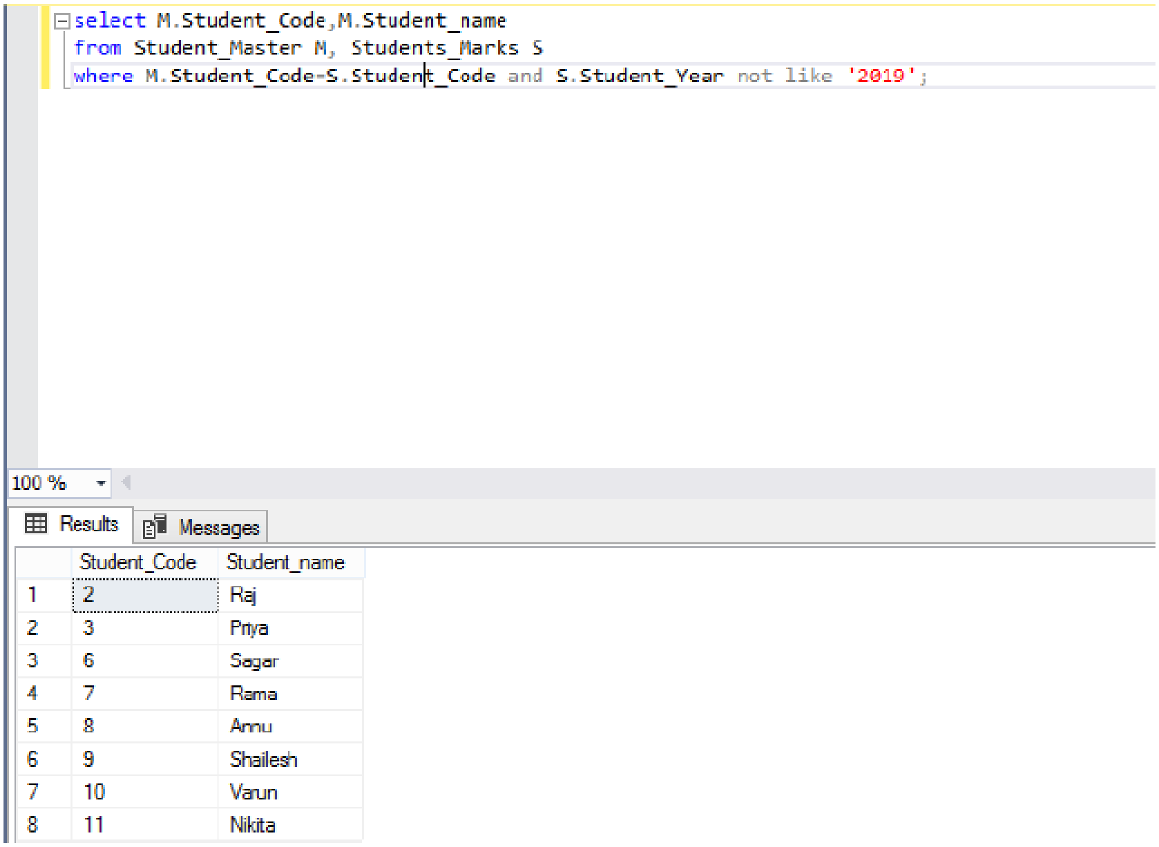
## 11.



```
select Staff_Code as "Staff Code",Staff_Name as "Staff Name"
from Staff_Master
where Dept_Code=20
union
select Student_Code as "Student Code",Student_Name as "Student Name"
from Student_Master
where Dept_Code=20;
```

|   | Staff Code | Staff Name |
|---|---|---|
| 1 | 1 | Shubham Dutta |
| 2 | 2 | Raj Kumar |
| 3 | 5 | Dhoni |

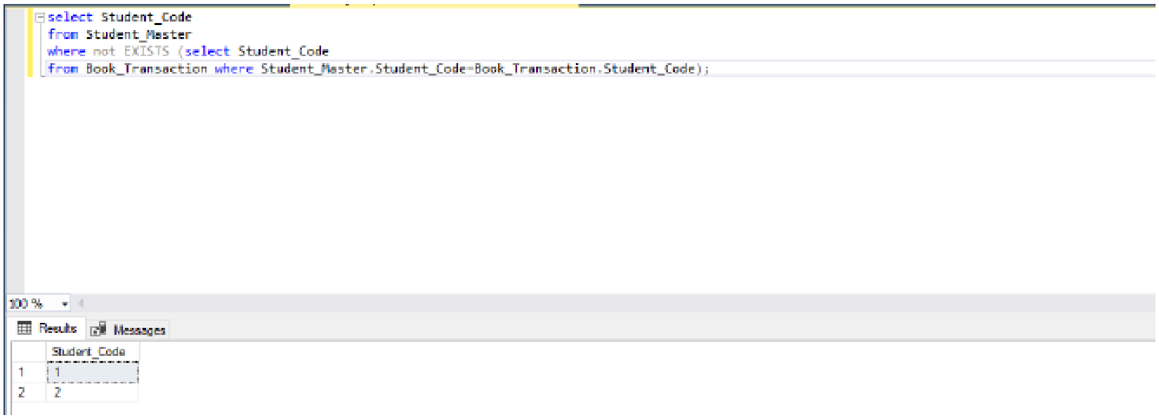
## 12.



```
select M.Student_Code,M.Student_name
from Student_Master M, Students_Marks S
where M.Student_Code=S.Student_Code and S.Student_Year not like '2019';
```

|   | Student_Code | Student_name |
|---|---|---|
| 1 | 2 | Raj |
| 2 | 3 | Priya |
| 3 | 6 | Sagar |
| 4 | 7 | Rama |
| 5 | 8 | Annu |
| 6 | 9 | Shailesh |
| 7 | 10 | Varun |
| 8 | 11 | Nikita |

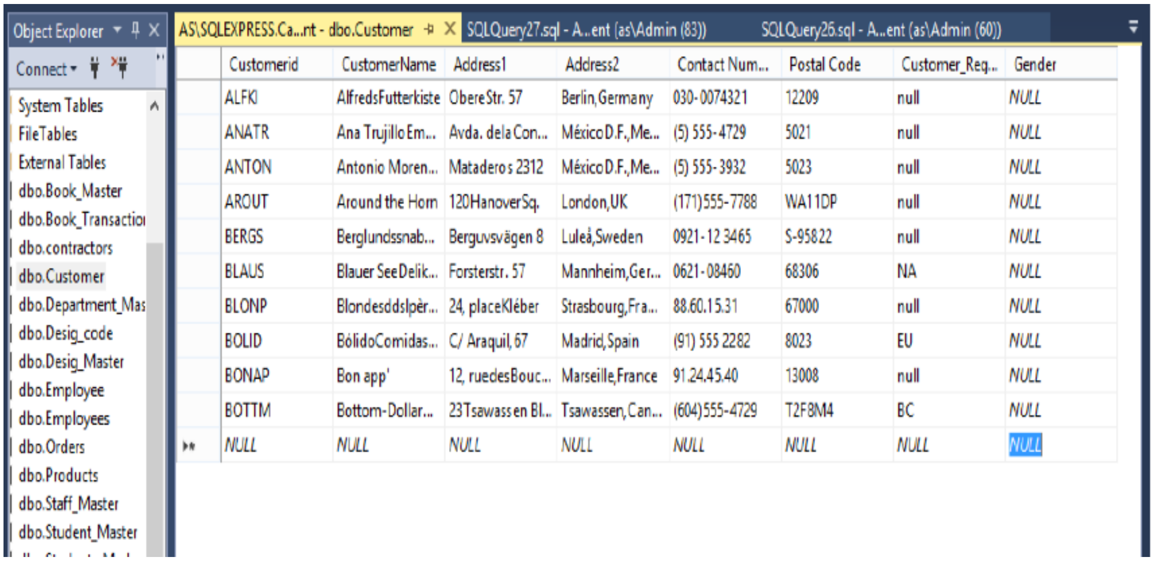
**13.**



```
select Student_Code
from Student_Master
where not EXISTS (select Student_Code
from Book_Transaction where Student_Master.Student_Code=Book_Transaction.Student_Code);
```

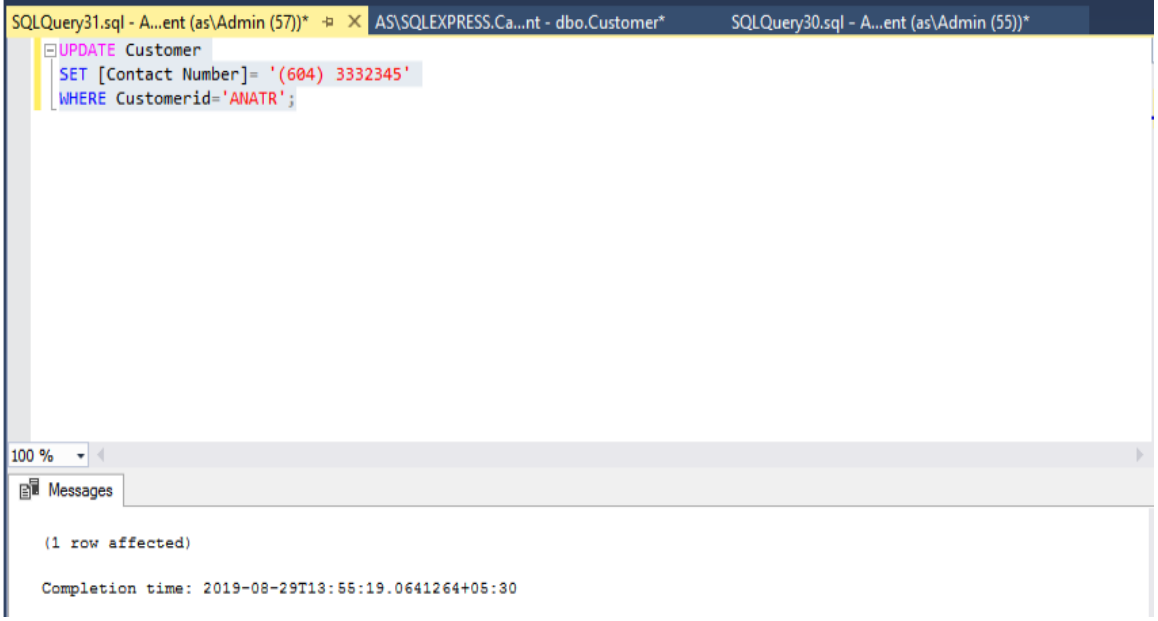
|   | Student_Code |
|---|---|
| 1 | 1 |
| 2 | 2 |

**14.**



|  | Customerid | CustomerName | Address1 | Address2 | Contact Num... | Postal Code | Customer_Req... | Gender |
|---|---|---|---|---|---|---|---|---|
|  | ALFKI | AlfredsFutterkiste | ObereStr. 57 | Berlin,Germany | 030-0074321 | 12209 | null | NULL |
|  | ANATR | Ana TrujilloEm... | Avda. dela Con... | MéxicoD.F.,Me... | (5) 555-4729 | 5021 | null | NULL |
|  | ANTON | Antonio Moren... | Mataderos 2312 | MéxicoD.F.,Me... | (5) 555-3932 | 5023 | null | NULL |
|  | AROUT | Around the Horn | 120HanoverSq. | London,UK | (171)555-7788 | WA11DP | null | NULL |
|  | BERGS | Berglundssnab... | Berguvsvägen 8 | Luleå,Sweden | 0921-12 3465 | S-95822 | null | NULL |
|  | BLAUS | Blauer SeeDelik... | Forsterstr. 57 | Mannheim,Ger... | 0621-08460 | 68306 | NA | NULL |
|  | BLONP | Blondesddslpèr... | 24, placeKléber | Strasbourg,Fra... | 88.60.15.31 | 67000 | null | NULL |
|  | BOLID | BólidoComidas... | C/ Araquil, 67 | Madrid,Spain | (91) 555 2282 | 8023 | EU | NULL |
|  | BONAP | Bon app' | 12, ruedesBouc... | Marseille,France | 91.24.45.40 | 13008 | null | NULL |
|  | BOTTM | Bottom-Dollar... | 23Tsawassen Bl... | Tsawassen,Can... | (604)555-4729 | T2F8M4 | BC | NULL |
| ▸* | NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |

**15.** Replace the contact number of Customer id ANATR to (604) 3332345



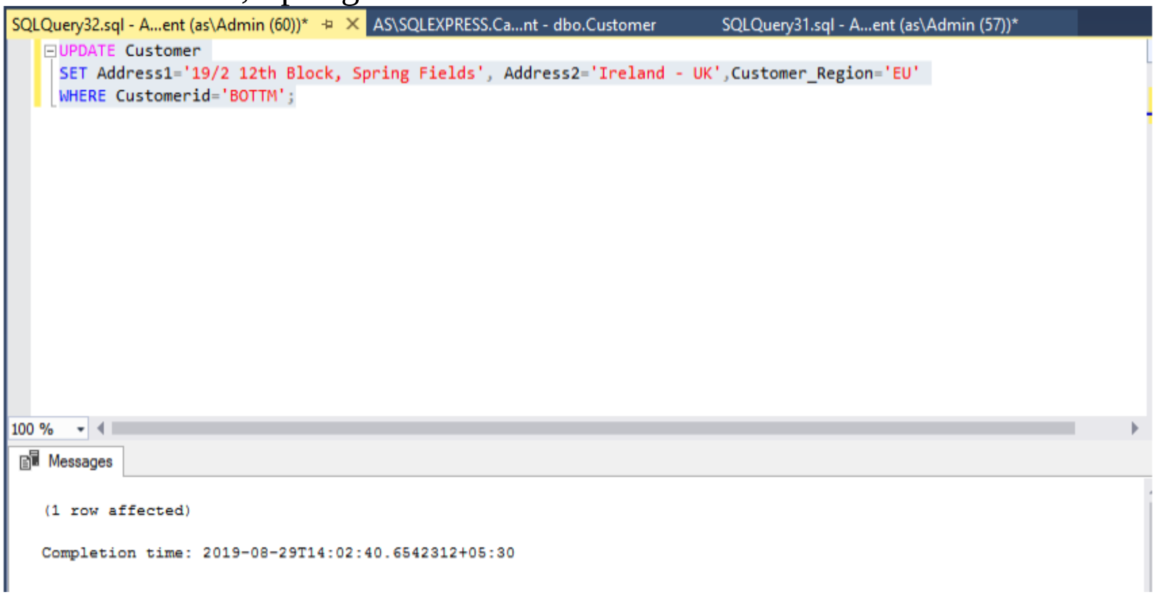
SQLQuery31.sql - A...ent (as\Admin (57))*
AS\SQLEXPRESS.Ca...nt - dbo.Customer*
SQLQuery30.sql - A...ent (as\Admin (55))*
100 %
Messages

```sql
UPDATE Customer
SET [Contact Number]= '(604) 3332345'
WHERE Customerid='ANATR';
```

```
(1 row affected)

Completion time: 2019-08-29T13:55:19.0641264+05:30
```

**16.** Update the Address and Region of Customer BOTTM to the following

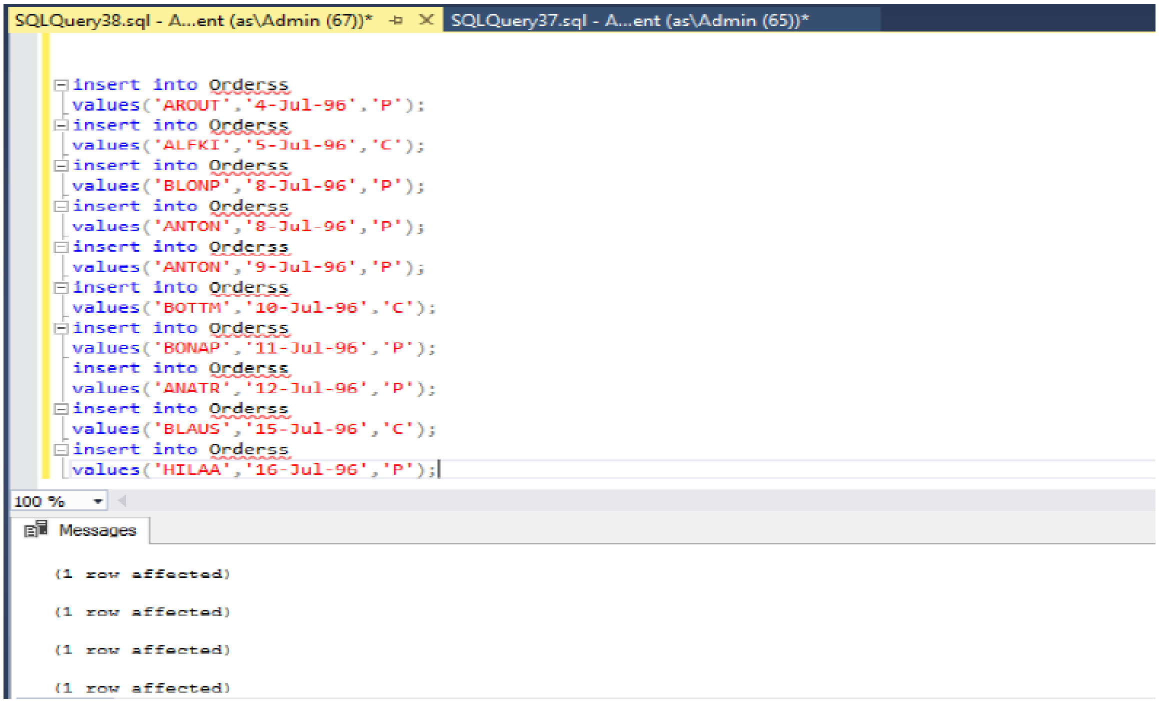
19/2 12th Block, Spring Fields.


SQLQuery32.sql - A...ent (as\Admin (60))*
AS\SQLEXPRESS.Ca...nt - dbo.Customer
SQLQuery31.sql - A...ent (as\Admin (57))*
100 %
Messages

```
UPDATE Customer
SET Address1='19/2 12th Block, Spring Fields', Address2='Ireland - UK',Customer_Region='EU'
WHERE Customerid='BOTTM';
```

```
(1 row affected)

Completion time: 2019-08-29T14:02:40.6542312+05:30
```

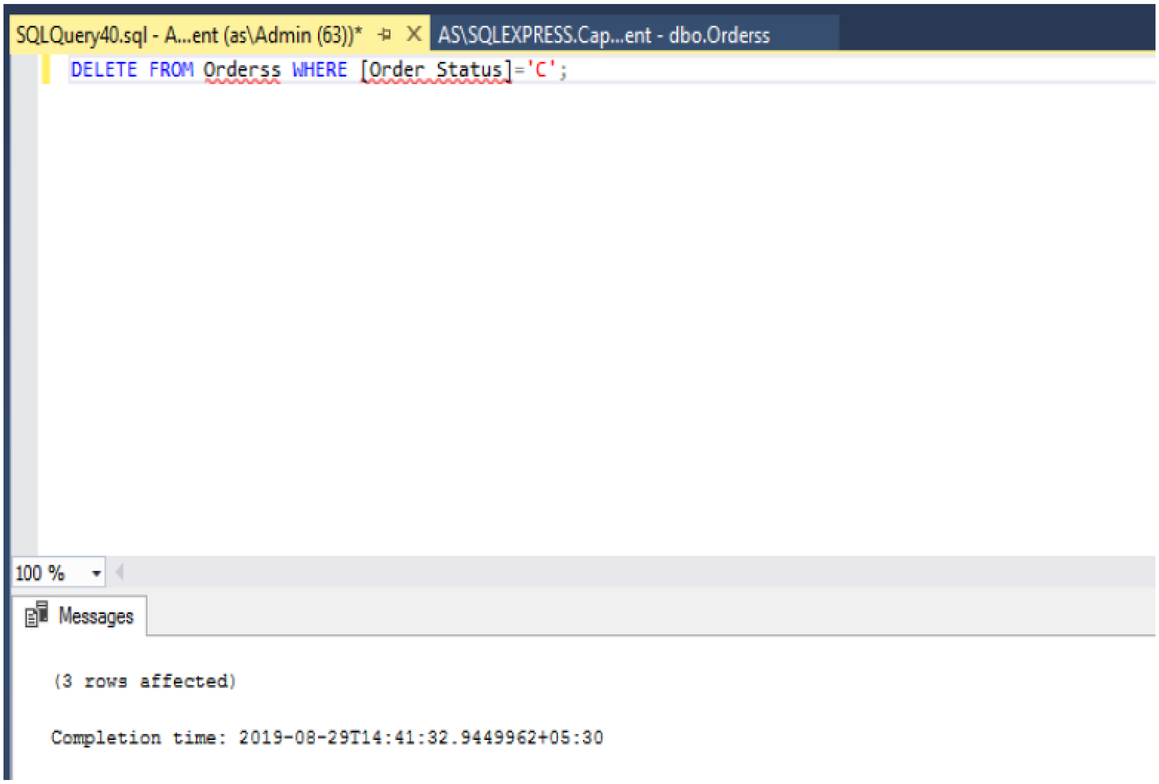
17


SQLQuery38.sql - A...ent (as\Admin (67))*
SQLQuery37.sql - A...ent (as\Admin (65))*
100 %
Messages

```
insert into Orderss
values('AROUT','4-Jul-96','P');
insert into Orderss
values('ALFKI','5-Jul-96','C');
insert into Orderss
values('BLONP','8-Jul-96','P');
insert into Orderss
values('ANTON','8-Jul-96','P');
insert into Orderss
values('ANTON','9-Jul-96','P');
insert into Orderss
values('BOTTM','10-Jul-96','C');
insert into Orderss
values('BONAP','11-Jul-96','P');
insert into Orderss
values('ANATR','12-Jul-96','P');
insert into Orderss
values('BLAUS','15-Jul-96','C');
insert into Orderss
values('HILAA','16-Jul-96','P');
```

```
(1 row affected)

(1 row affected)

(1 row affected)

(1 row affected)
```

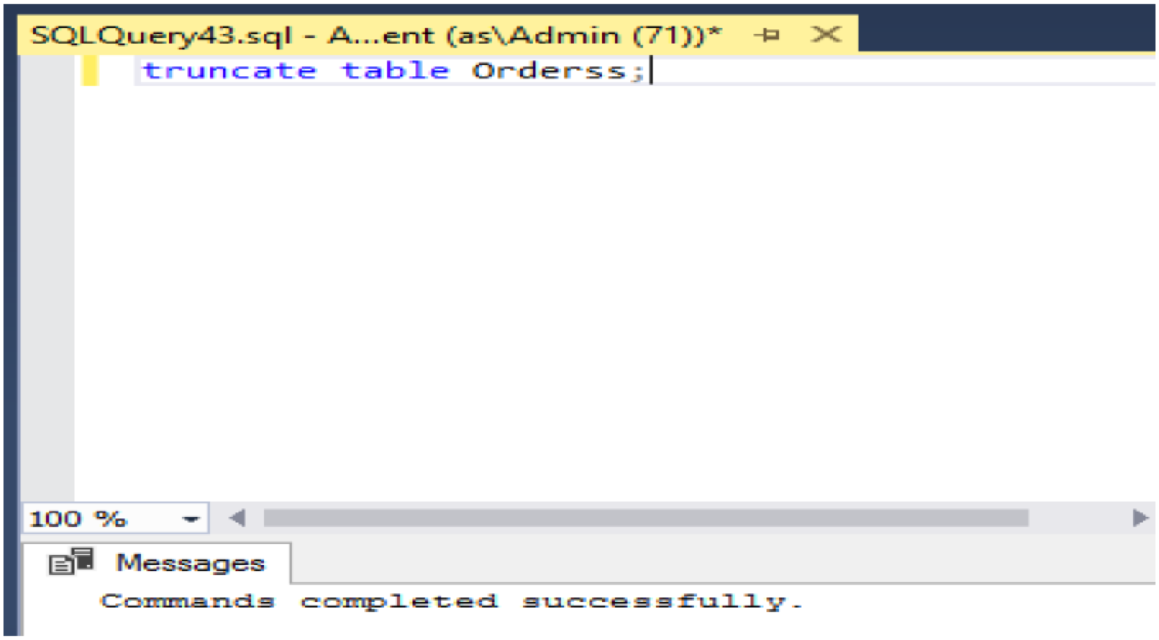
18


SQLQuery40.sql - A...ent (as\Admin (63))*
AS\SQLEXPRESS.Cap...ent - dbo.Orderss
100 %
Messages

```
DELETE FROM Orderss WHERE [Order Status]='C';
```

```
(3 rows affected)

Completion time: 2019-08-29T14:41:32.9449962+05:30
```

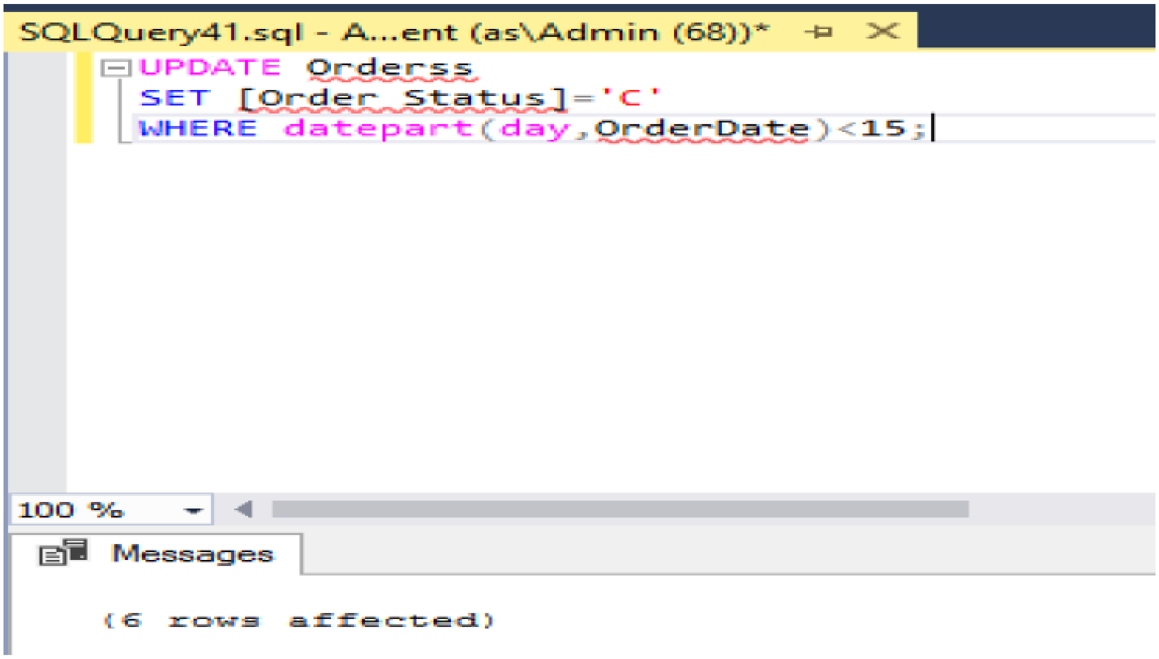
19



```
truncate table Orderss;
```

```
Commands completed successfully.
```

20

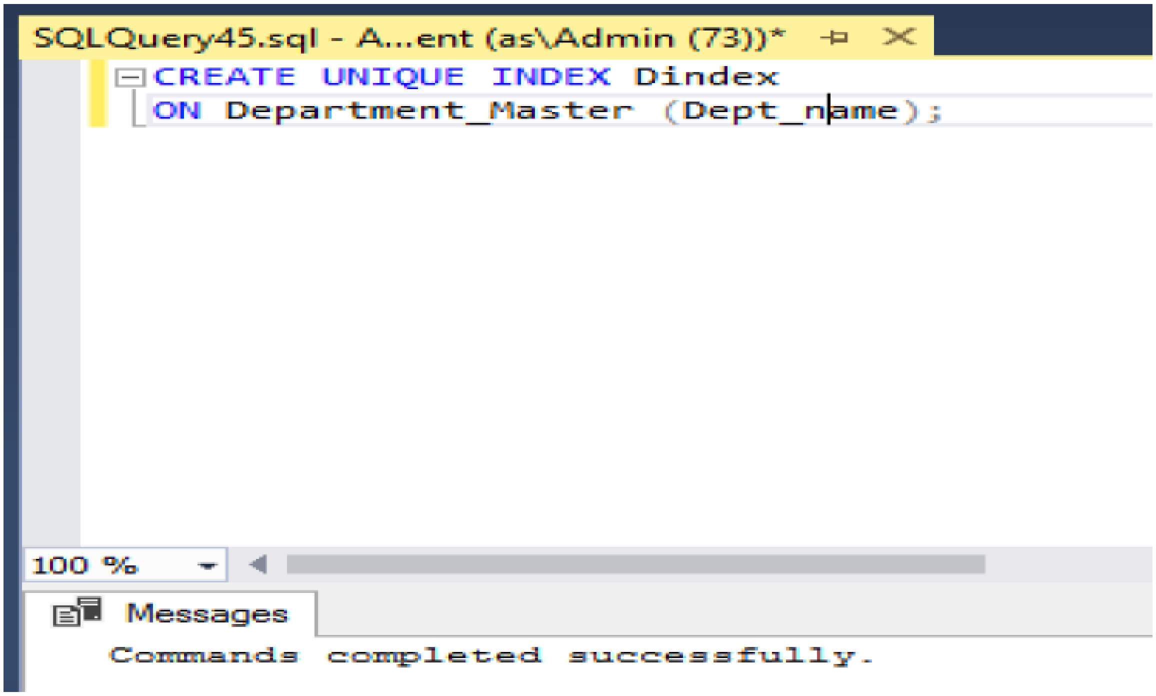


```
UPDATE Orderss
SET [Order Status]='C'
WHERE datepart(day,OrderDate)<15;
```

```
(6 rows affected)
```

## 1.6 Indexes and Views

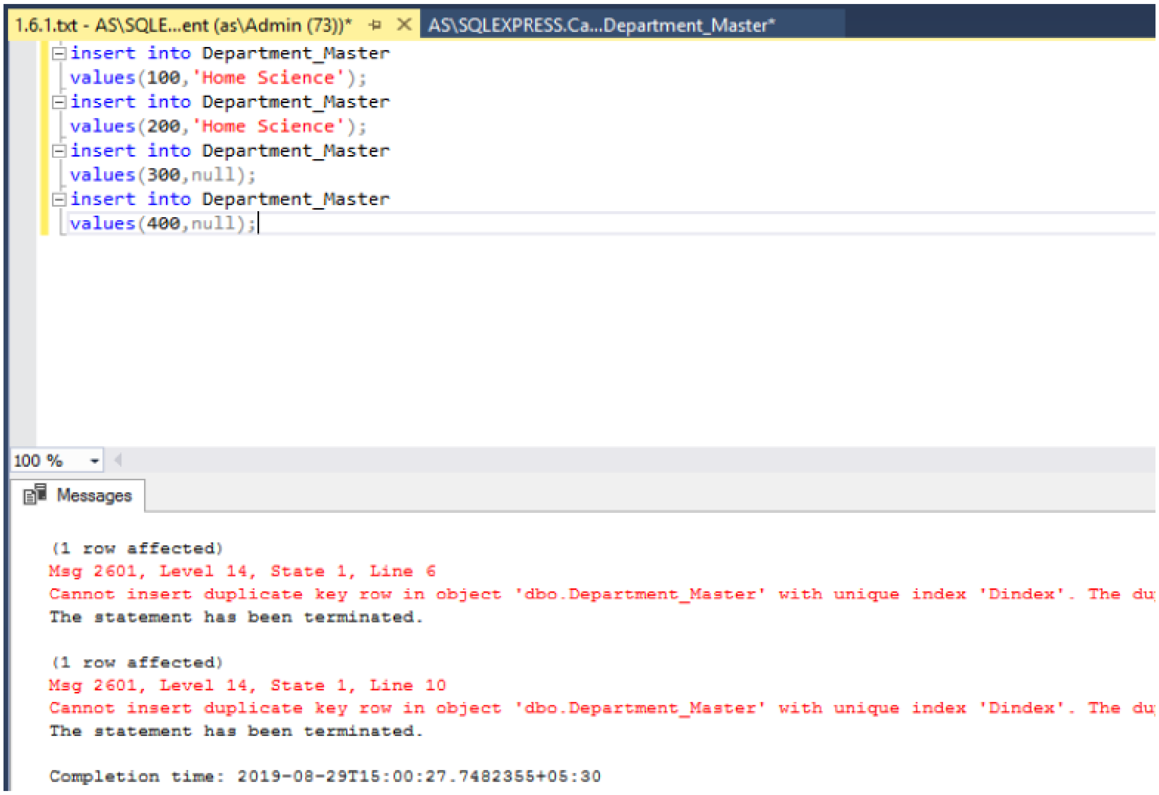
**1.**



```
CREATE UNIQUE INDEX Dindex
ON Department_Master (Dept_name);
```

```
Commands completed successfully.
```

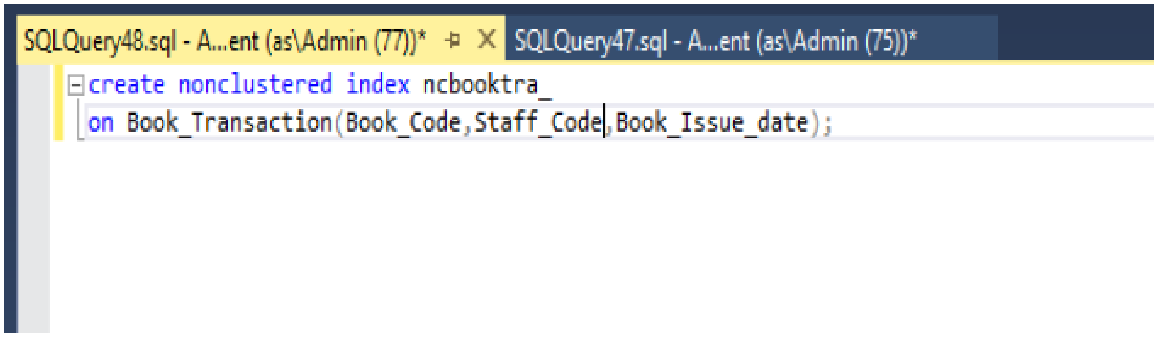
**2.**


1.6.1.txt - AS\SQLE...ent (as\Admin (73))*
AS\SQLEXPRESS.Ca...Department_Master*
100 %
Messages

```
insert into Department_Master
values(100,'Home Science');
insert into Department_Master
values(200,'Home Science');
insert into Department_Master
values(300,null);
insert into Department_Master
values(400,null);
```

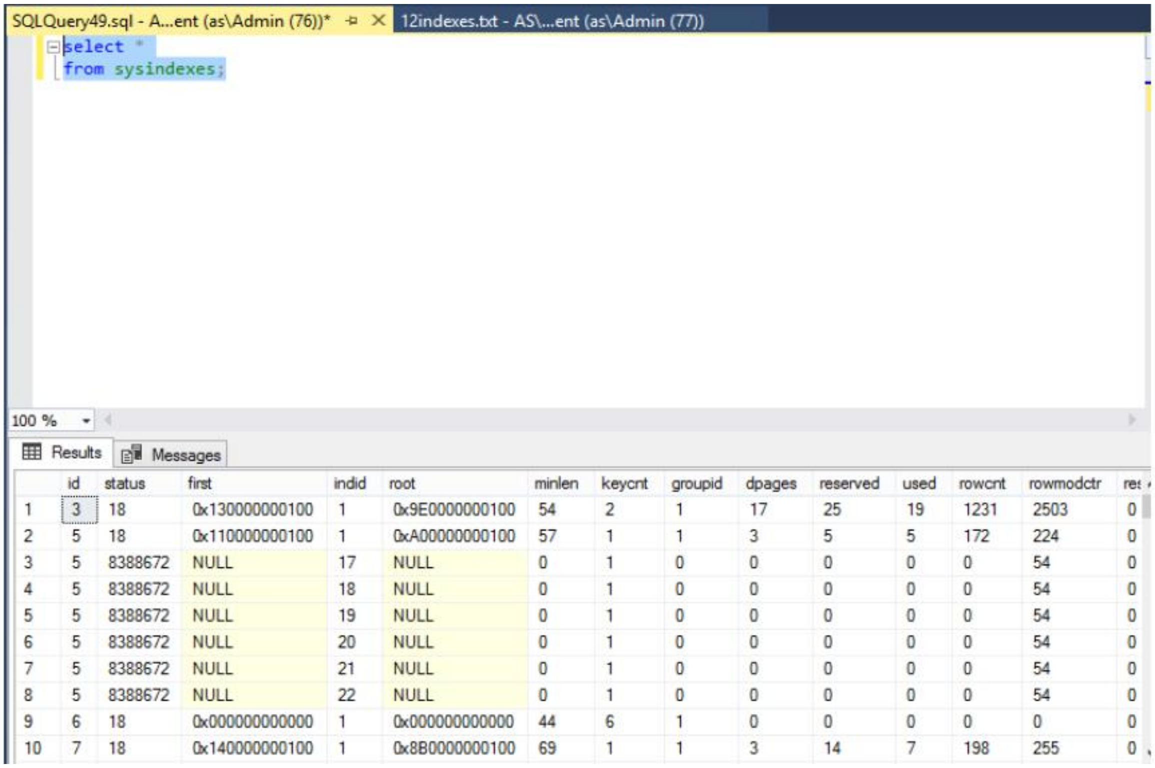
```
(1 row affected)
Msg 2601, Level 14, State 1, Line 6
Cannot insert duplicate key row in object 'dbo.Department_Master' with unique index 'Dindex'. The du
The statement has been terminated.

(1 row affected)
Msg 2601, Level 14, State 1, Line 10
Cannot insert duplicate key row in object 'dbo.Department_Master' with unique index 'Dindex'. The du
The statement has been terminated.

Completion time: 2019-08-29T15:00:27.7482355+05:30
```

**3.**


SQLQuery48.sql - A...ent (as\Admin (77))*
SQLQuery47.sql - A...ent (as\Admin (75))*

```
create nonclustered index ncbooktra_
on Book_Transaction(Book_Code,Staff_Code,Book_Issue_date);
```

**4.**

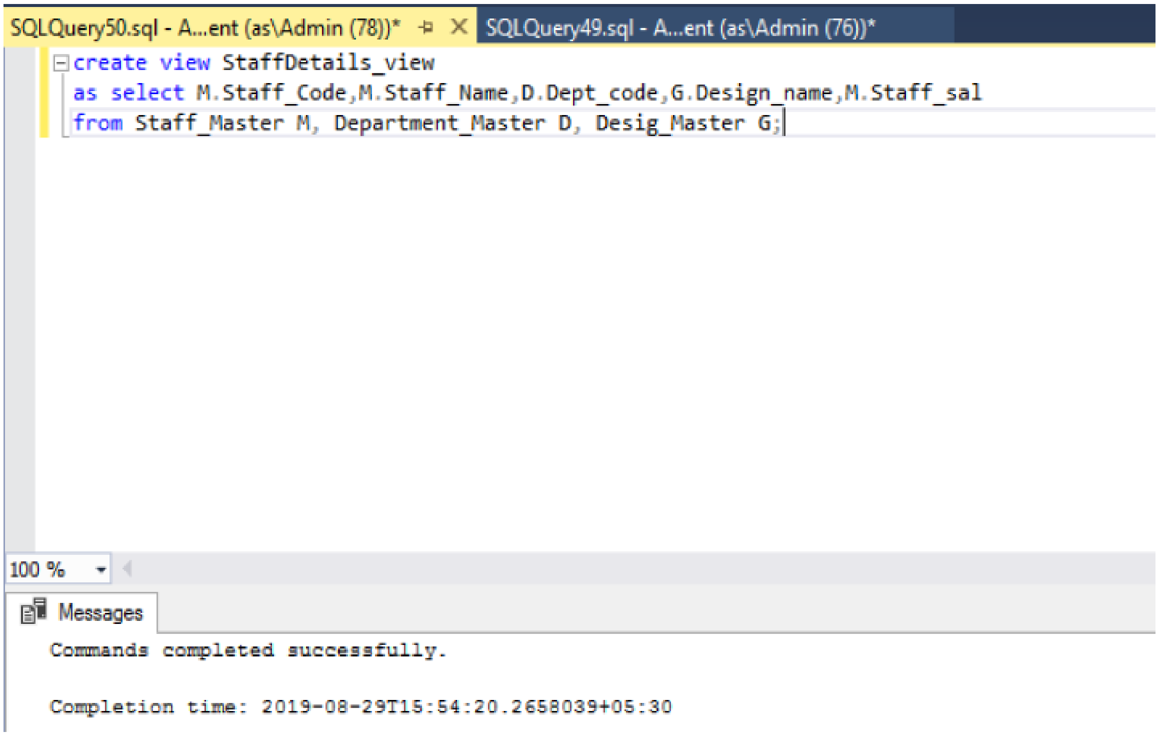


SQLQuery49.sql - A...ent (as\Admin (76))*
12indexes.txt - AS\...ent (as\Admin (77))
100 %
Results
Messages

```
select *
from sysindexes;
```

|  | id | status | first | indid | root | minlen | keycnt | groupid | dpages | reserved | used | rowcnt | rowmodctr | res |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 18 | 0x130000000100 | 1 | 0x9E0000000100 | 54 | 2 | 1 | 17 | 25 | 19 | 1231 | 2503 | 0 |
| 2 | 5 | 18 | 0x110000000100 | 1 | 0xA00000000100 | 57 | 1 | 1 | 3 | 5 | 5 | 172 | 224 | 0 |
| 3 | 5 | 8388672 | NULL | 17 | NULL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | 0 |
| 4 | 5 | 8388672 | NULL | 18 | NULL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | 0 |
| 5 | 5 | 8388672 | NULL | 19 | NULL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | 0 |
| 6 | 5 | 8388672 | NULL | 20 | NULL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | 0 |
| 7 | 5 | 8388672 | NULL | 21 | NULL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | 0 |
| 8 | 5 | 8388672 | NULL | 22 | NULL | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | 0 |
| 9 | 6 | 18 | 0x000000000000 | 1 | 0x000000000000 | 44 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 7 | 18 | 0x140000000100 | 1 | 0x8B0000000100 | 69 | 1 | 1 | 3 | 14 | 7 | 198 | 255 | 0 |

**5.**

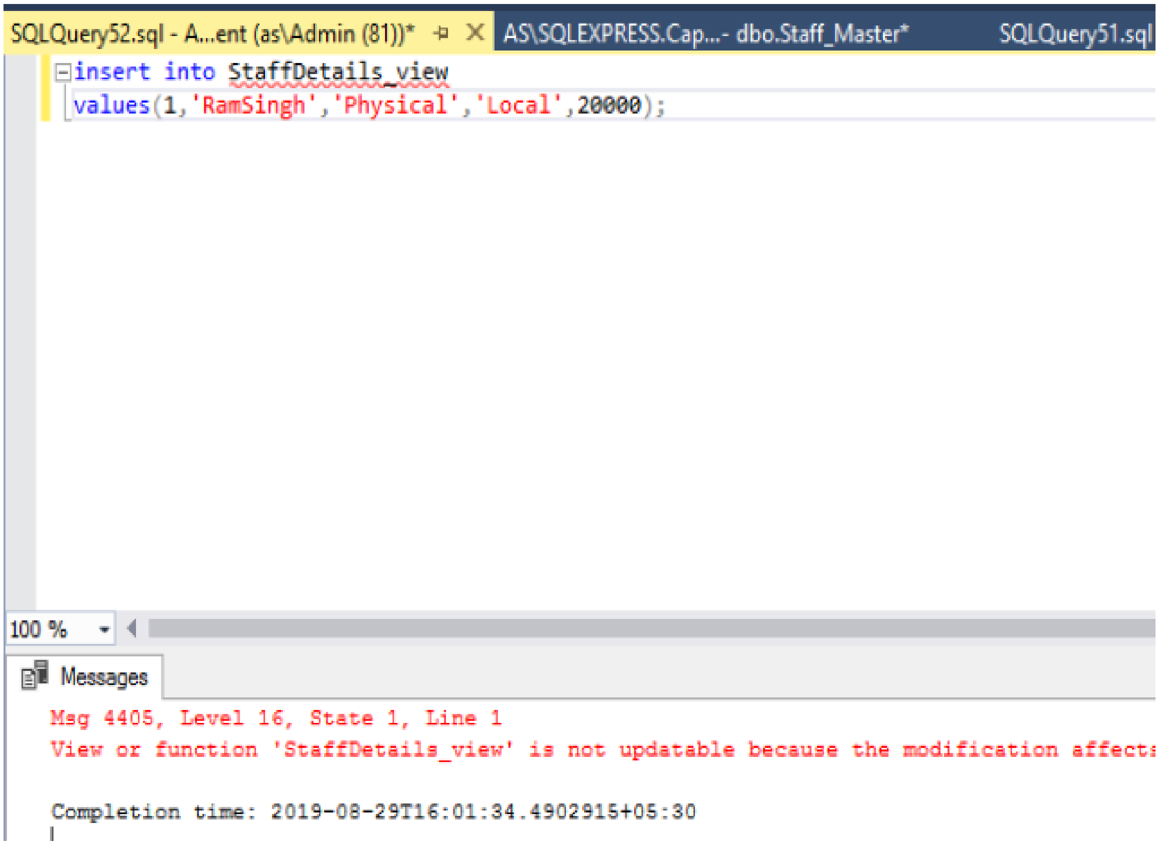


SQLQuery50.sql - A...ent (as\Admin (78))*
SQLQuery49.sql - A...ent (as\Admin (76))*
100 %
Messages

```
create view StaffDetails_view
as select M.Staff_Code,M.Staff_Name,D.Dept_code,G.Design_name,M.Staff_sal
from Staff_Master M, Department_Master D, Desig_Master G;
```

```
Commands completed successfully.

Completion time: 2019-08-29T15:54:20.2658039+05:30
```

**6.**

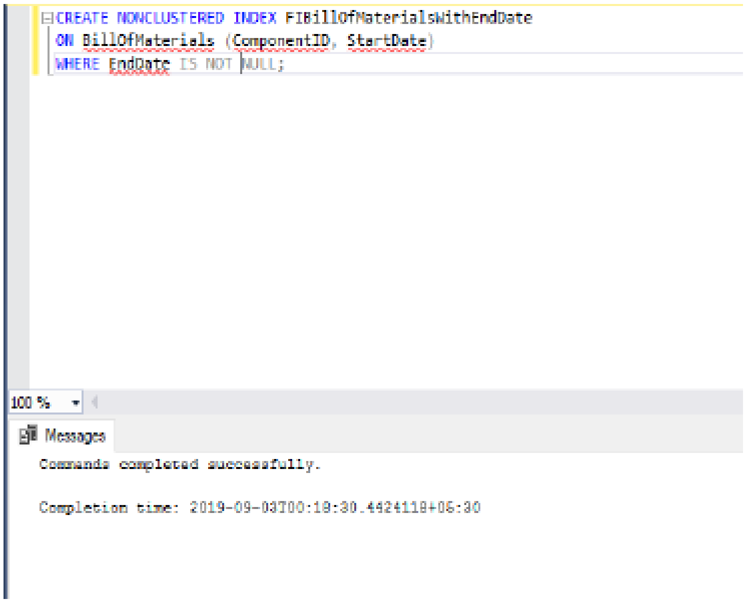


SQLQuery52.sql - A...ent (as\Admin (81))*
AS\SQLEXPRESS.Cap...- dbo.Staff_Master*
SQLQuery51.sql
100 %
Messages

```
insert into StaffDetails_view
values(1,'RamSingh','Physical','Local',20000);
```

```
Msg 4405, Level 16, State 1, Line 1
View or function 'StaffDetails_view' is not updatable because the modification affects

Completion time: 2019-08-29T16:01:34.4902915+05:30
```

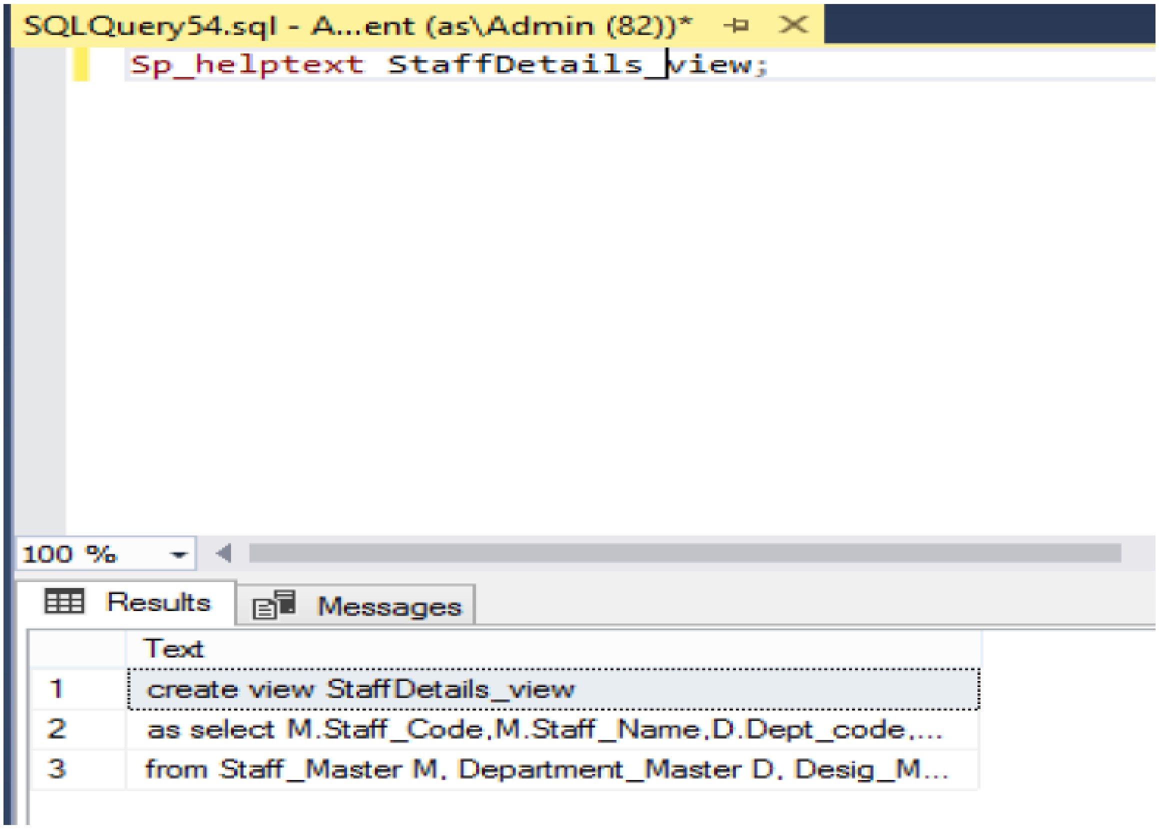
**7.**



```
CREATE NONCLUSTERED INDEX FIBillOfMaterialsWithEndDate
ON BillOfMaterials (ComponentID, StartDate)
WHERE EndDate IS NOT NULL;
```

```
Commands completed successfully.

Completion time: 2019-09-03T00:18:30.4424118+05:30
```

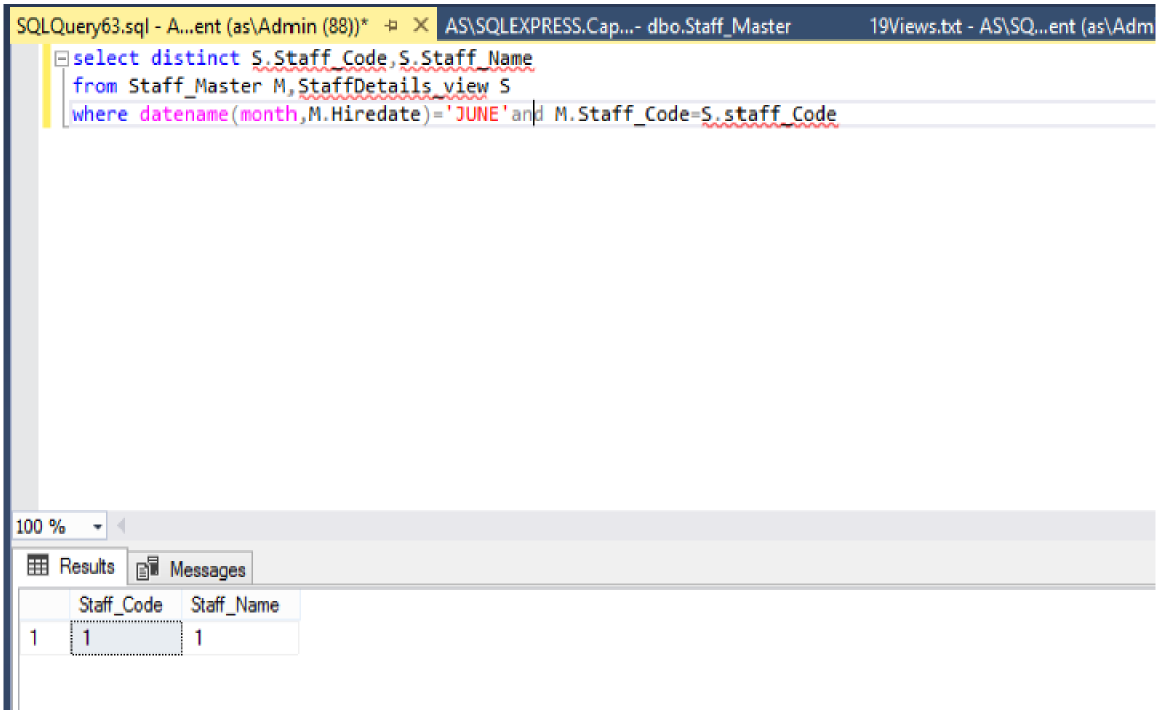
**8.**



```sql
Sp_helptext StaffDetails_view;
```

|   | Text |
|---|---|
| 1 | create view StaffDetails_view |
| 2 | as select M.Staff_Code,M.Staff_Name,D.Dept_code,... |
| 3 | from Staff_Master M, Department_Master D, Desig_M... |

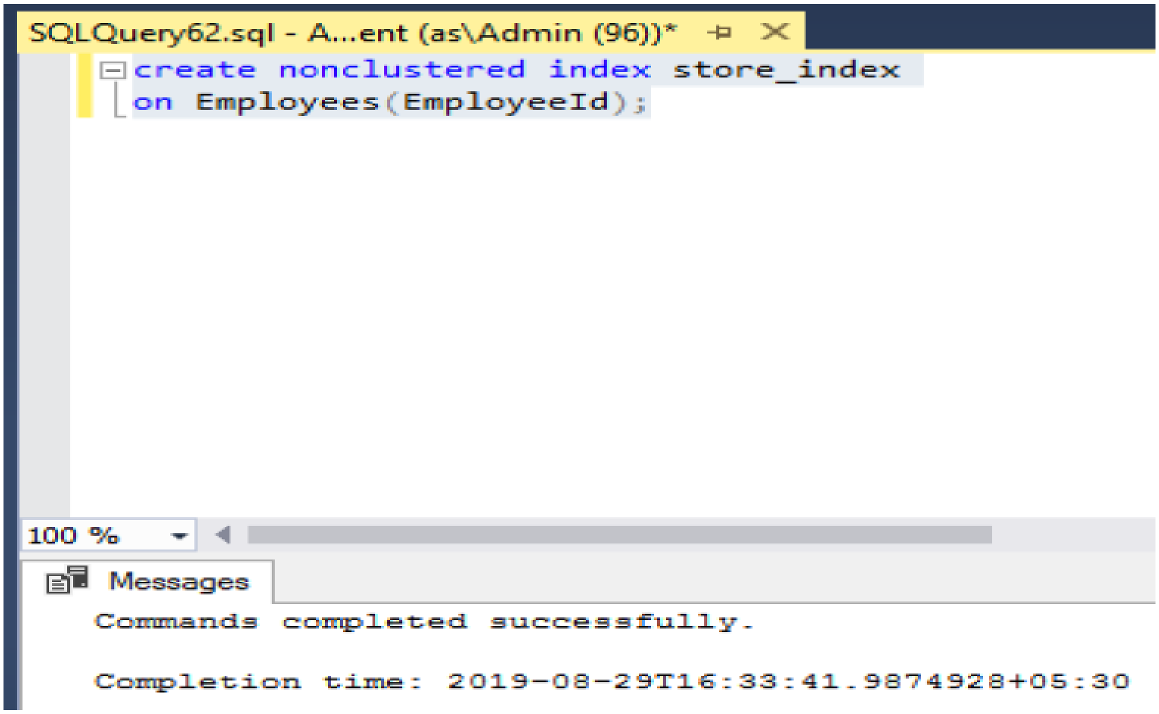
**9.**


SQLQuery63.sql - A...ent (as\Admin (88))*
AS\SQLEXPRESS.Cap...- dbo.Staff_Master
19Views.txt - AS\SQ...ent (as\Adm
100 %
Results
Messages

```sql
select distinct S.Staff_Code,S.Staff_Name
from Staff_Master M,StaffDetails_view S
where datename(month,M.Hiredate)='JUNE'and M.Staff_Code=S.staff_Code
```

|   | Staff_Code | Staff_Name |
|---|---|---|
| 1 | 1 | 1 |

**10.**

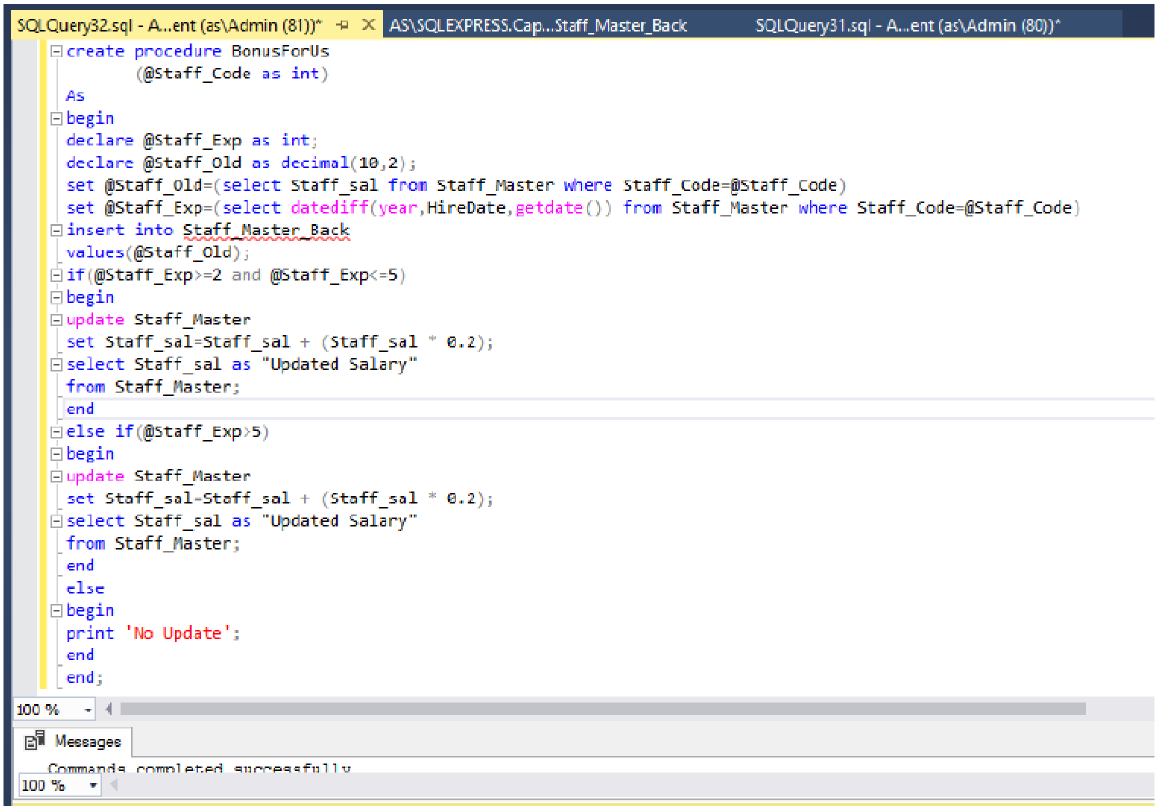


```
create nonclustered index store_index
on Employees(EmployeeId);
```

```
Commands completed successfully.

Completion time: 2019-08-29T16:33:41.9874928+05:30
```

## 1.7 Procedures and Exception Handling in SQL server

**1.**

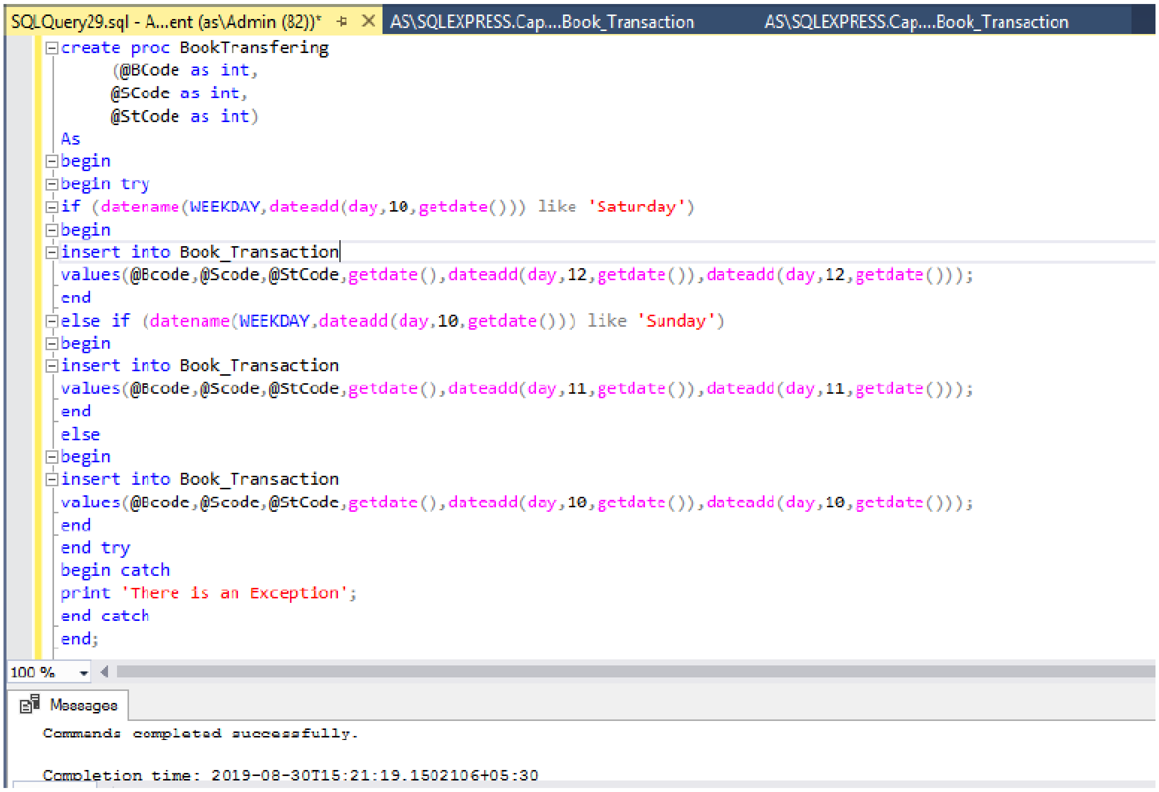


SQLQuery32.sql - A...ent (as\Admin (81))*
AS\SQLEXPRESS.Cap...Staff_Master_Back
SQLQuery31.sql - A...ent (as\Admin (80))*
100 %
Messages
100 %

```
create procedure BonusForUs
        (@Staff_Code as int)
As
begin
declare @Staff_Exp as int;
declare @Staff_Old as decimal(10,2);
set @Staff_Old=(select Staff_sal from Staff_Master where Staff_Code=@Staff_Code)
set @Staff_Exp=(select datediff(year,HireDate,getdate()) from Staff_Master where Staff_Code=@Staff_Code)
insert into Staff_Master_Back
values(@Staff_Old);
if(@Staff_Exp>=2 and @Staff_Exp<=5)
begin
update Staff_Master
set Staff_sal=Staff_sal + (Staff_sal * 0.2);
select Staff_sal as "Updated Salary"
from Staff_Master;
end
else if(@Staff_Exp>5)
begin
update Staff_Master
set Staff_sal-Staff_sal + (Staff_sal * 0.2);
select Staff_sal as "Updated Salary"
from Staff_Master;
end
else
begin
print 'No Update';
end
end;
```

```
Commands completed successfully.
```

## 2.

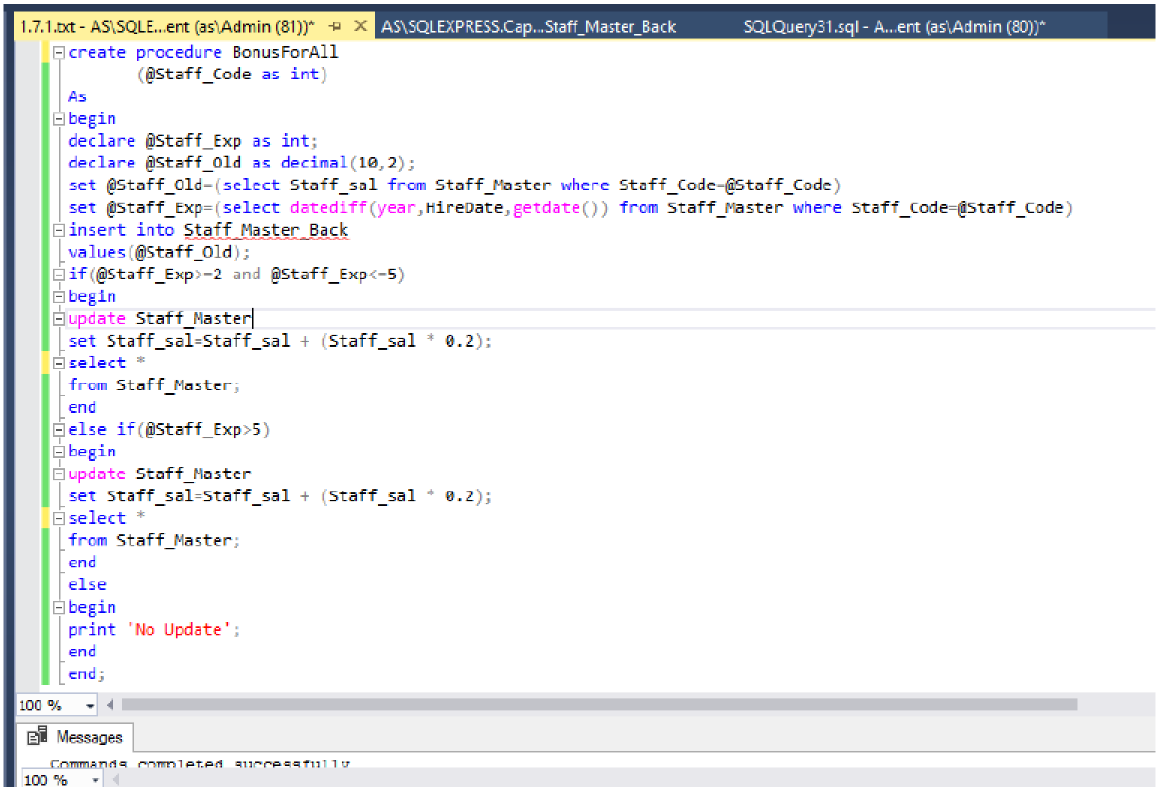


SQLQuery29.sql - A...ent (as\Admin (82))*
AS\SQLEXPRESS.Cap....Book_Transaction
AS\SQLEXPRESS.Cap....Book_Transaction
100 %
Messages

```sql
create proc BookTransfering
      (@BCode as int,
      @SCode as int,
      @StCode as int)
As
begin
begin try
if (datename(WEEKDAY,dateadd(day,10,getdate())) like 'Saturday')
begin
insert into Book_Transaction
values(@Bcode,@Scode,@StCode,getdate(),dateadd(day,12,getdate()),dateadd(day,12,getdate()));
end
else if (datename(WEEKDAY,dateadd(day,10,getdate())) like 'Sunday')
begin
insert into Book_Transaction
values(@Bcode,@Scode,@StCode,getdate(),dateadd(day,11,getdate()),dateadd(day,11,getdate()));
end
else
begin
insert into Book_Transaction
values(@Bcode,@Scode,@StCode,getdate(),dateadd(day,10,getdate()),dateadd(day,10,getdate()));
end
end try
begin catch
print 'There is an Exception';
end catch
end;
```

```
Commands completed successfully.

Completion time: 2019-08-30T15:21:19.1502106+05:30
```

## 3.

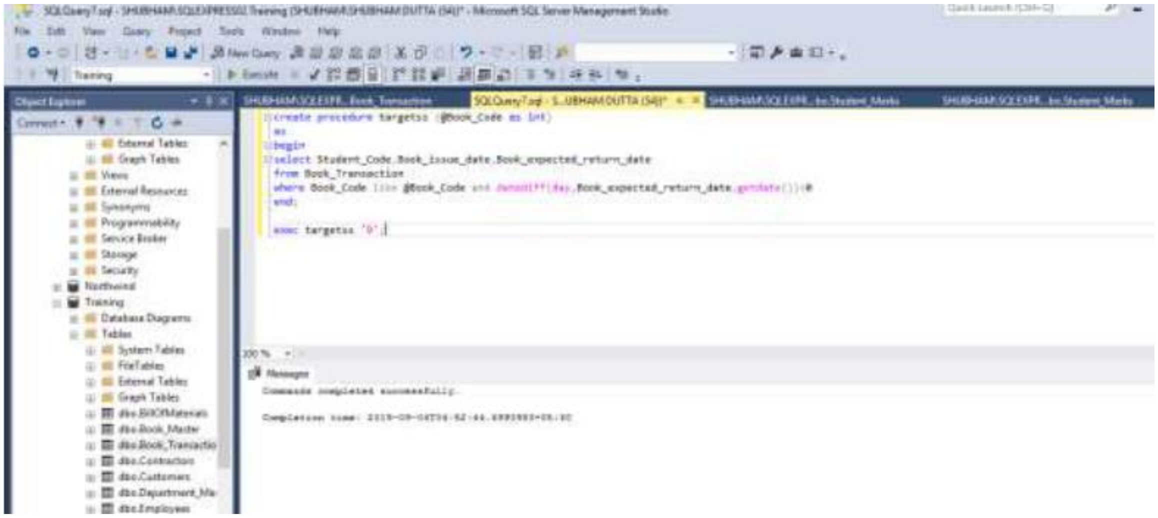


1.7.1.txt - AS\SQLE...ent (as\Admin (81))*
AS\SQLEXPRESS.Cap...Staff_Master_Back
SQLQuery31.sql - A...ent (as\Admin (80))*
100 %
Messages
100 %

```sql
create procedure BonusForAll
        (@Staff_Code as int)
As
begin
declare @Staff_Exp as int;
declare @Staff_Old as decimal(10,2);
set @Staff_Old=(select Staff_sal from Staff_Master where Staff_Code=@Staff_Code)
set @Staff_Exp=(select datediff(year,HireDate,getdate()) from Staff_Master where Staff_Code=@Staff_Code)
insert into Staff_Master_Back
values(@Staff_Old);
if(@Staff_Exp>=2 and @Staff_Exp<=5)
begin
update Staff_Master
set Staff_sal=Staff_sal + (Staff_sal * 0.2);
select *
from Staff_Master;
end
else if(@Staff_Exp>5)
begin
update Staff_Master
set Staff_sal=Staff_sal + (Staff_sal * 0.2);
select *
from Staff_Master;
end
else
begin
print 'No Update';
end
end;
```

```
Commands completed successfully
```

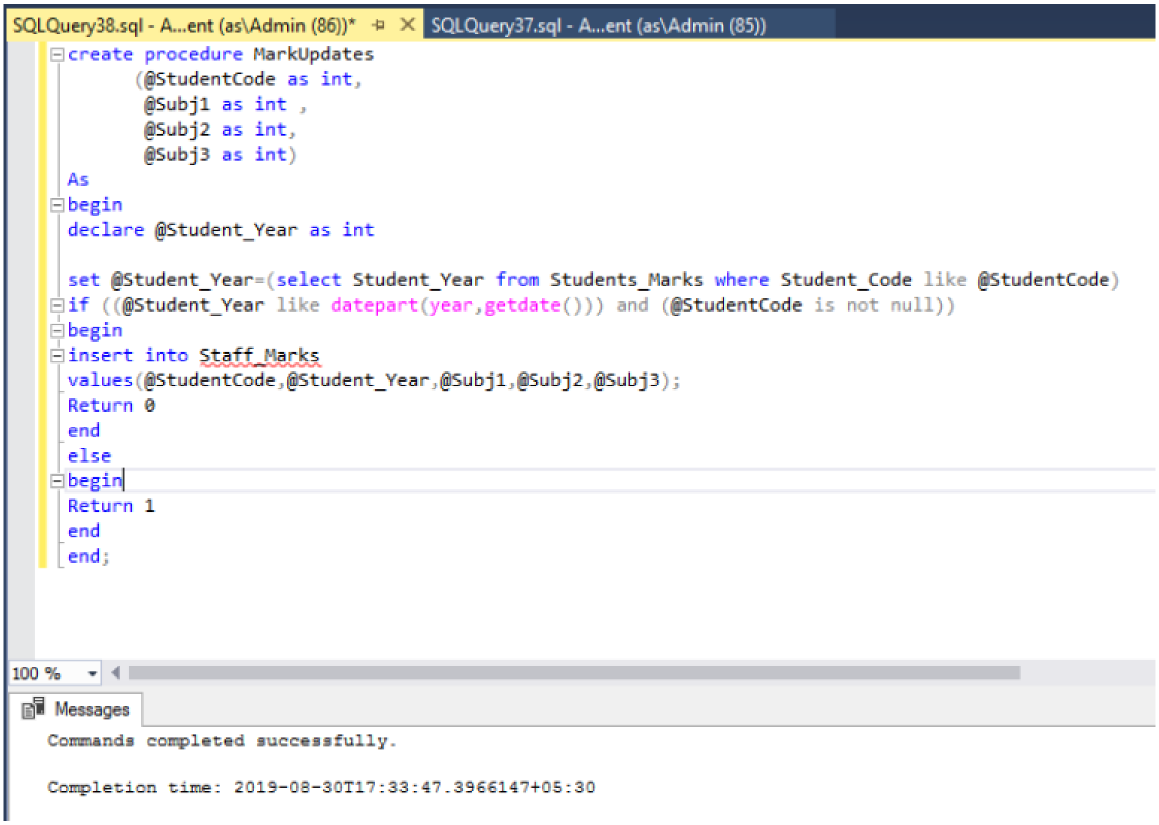
**4.**



```
create procedure targetss (@Book_Code as int)
as
begin
select Student_Code,Book_issue_date,Book_expected_return_date
from Book_Transaction
where Book_Code like @Book_Code and datediff(day,Book_expected_return_date,getdate())>0
end;

exec targetss '9';
```

```
Commands completed successfully.

Completion time: 2019-08-04T06:52:44.[illegible]+05:30
```

**5.**



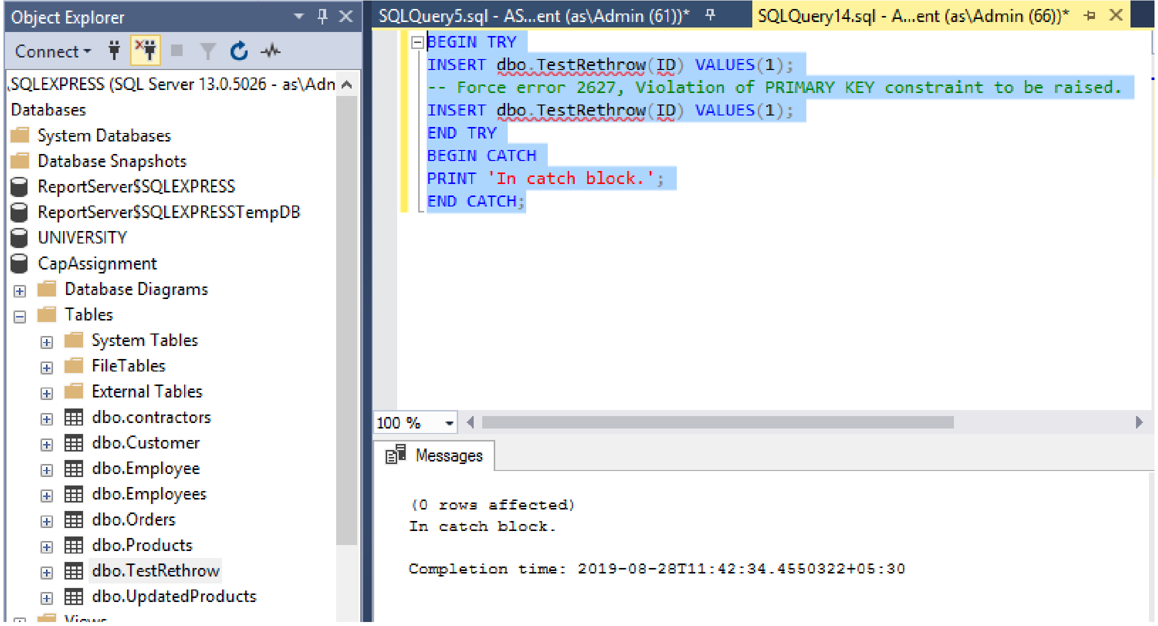
SQLQuery38.sql - A...ent (as\Admin (86))*
SQLQuery37.sql - A...ent (as\Admin (85))
100 %
Messages

```
create procedure MarkUpdates
        (@StudentCode as int,
         @Subj1 as int ,
         @Subj2 as int,
         @Subj3 as int)
As
begin
declare @Student_Year as int

set @Student_Year=(select Student_Year from Students_Marks where Student_Code like @StudentCode)
if ((@Student_Year like datepart(year,getdate())) and (@StudentCode is not null))
begin
insert into Staff_Marks
values(@StudentCode,@Student_Year,@Subj1,@Subj2,@Subj3);
Return 0
end
else
begin
Return 1
end
end;
```

```
Commands completed successfully.

Completion time: 2019-08-30T17:33:47.3966147+05:30
```

# Working with THROW Statement

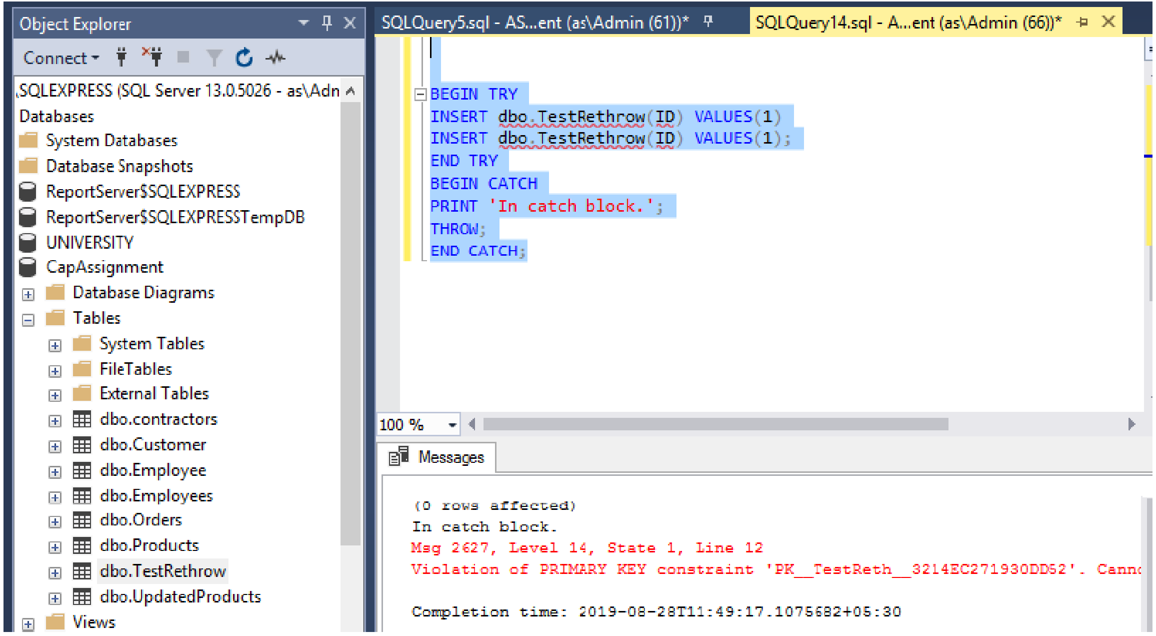
## Task 1 – Raising and Catching an Exception



```
BEGIN TRY
INSERT dbo.TestRethrow(ID) VALUES(1);
-- Force error 2627, Violation of PRIMARY KEY constraint to be raised.
INSERT dbo.TestRethrow(ID) VALUES(1);
END TRY
BEGIN CATCH
PRINT 'In catch block.';
END CATCH;
```

```
(0 rows affected)
In catch block.

Completion time: 2019-08-28T11:42:34.4550322+05:30
```

## Using Throw to Raise an Exception Again in a Catch Block

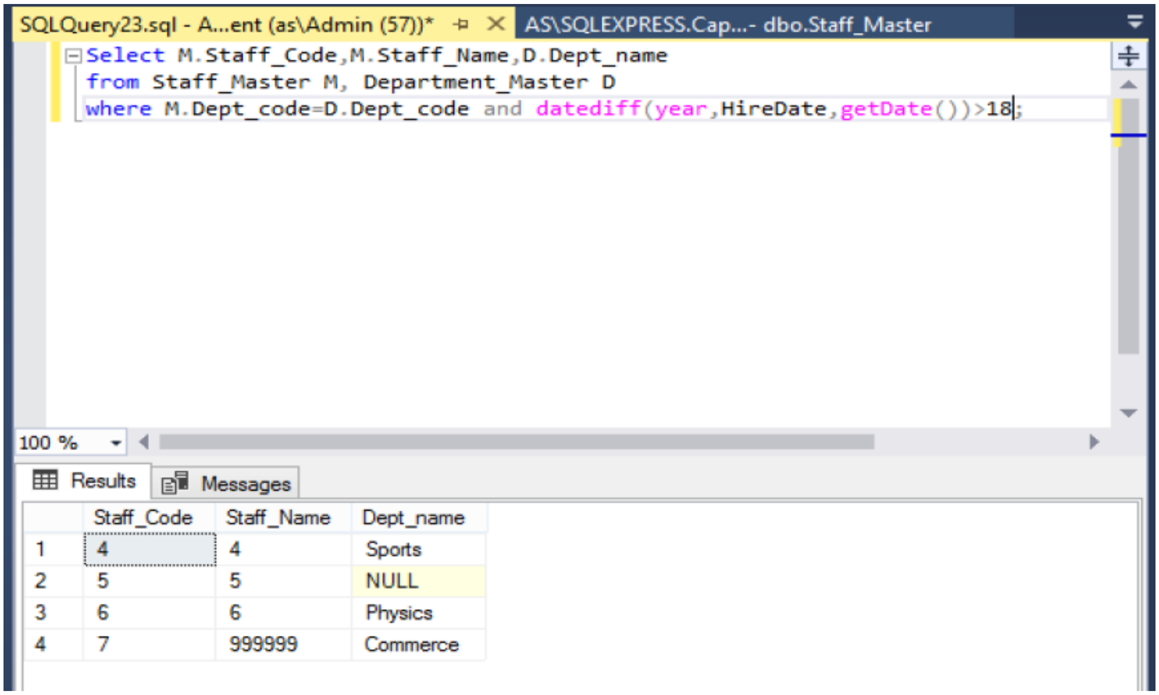


```
BEGIN TRY
INSERT dbo.TestRethrow(ID) VALUES(1)
INSERT dbo.TestRethrow(ID) VALUES(1);
END TRY
BEGIN CATCH
PRINT 'In catch block.';
THROW;
END CATCH;
```

```
(0 rows affected)
In catch block.
Msg 2627, Level 14, State 1, Line 12
Violation of PRIMARY KEY constraint 'PK__TestReth__3214EC271930DD52'. Cann

Completion time: 2019-08-28T11:49:17.1075682+05:30
```

## 2.1 Transact-SQL Statements

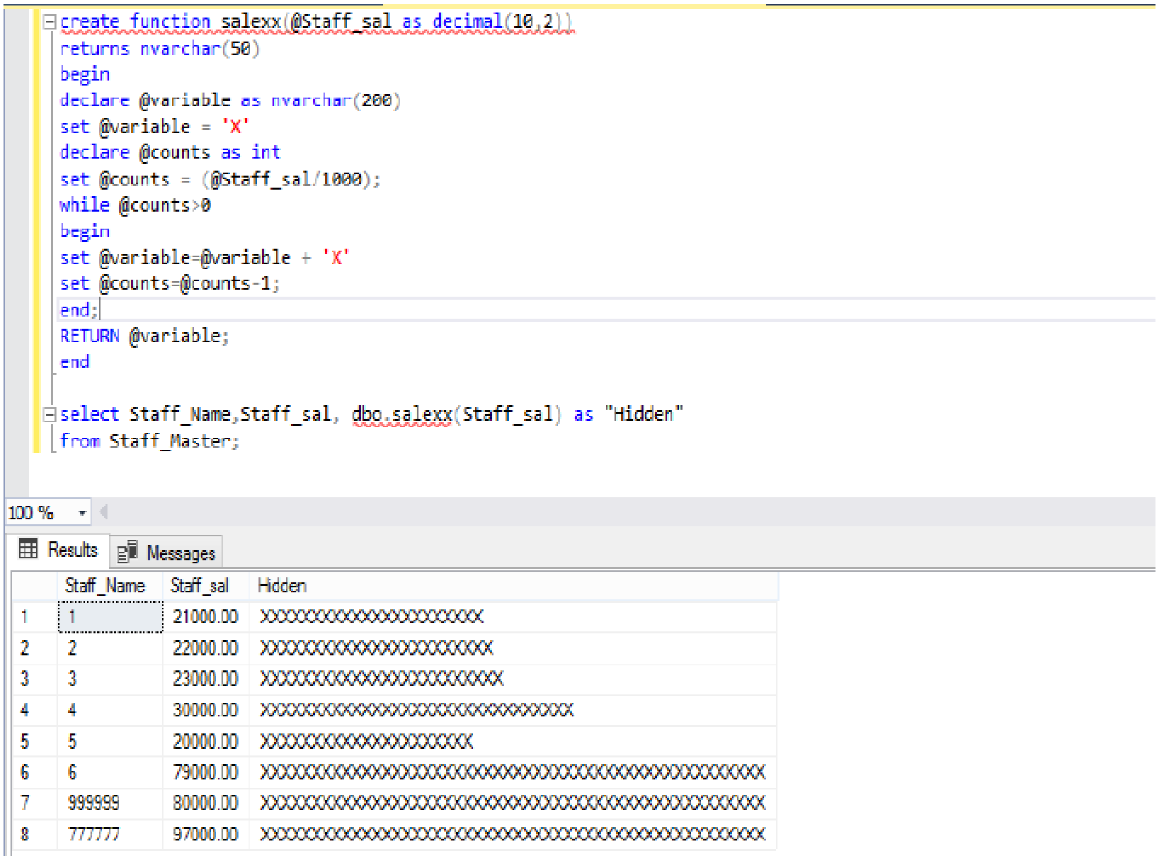
1.


SQLQuery23.sql - A...ent (as\Admin (57))*
AS\SQLEXPRESS.Cap...- dbo.Staff_Master
100 %
Results
Messages

```sql
Select M.Staff_Code,M.Staff_Name,D.Dept_name
from Staff_Master M, Department_Master D
where M.Dept_code=D.Dept_code and datediff(year,HireDate,getDate())>18;
```

| | Staff_Code | Staff_Name | Dept_name |
|---|---|---|---|
| 1 | 4 | 4 | Sports |
| 2 | 5 | 5 | NULL |
| 3 | 6 | 6 | Physics |
| 4 | 7 | 999999 | Commerce |

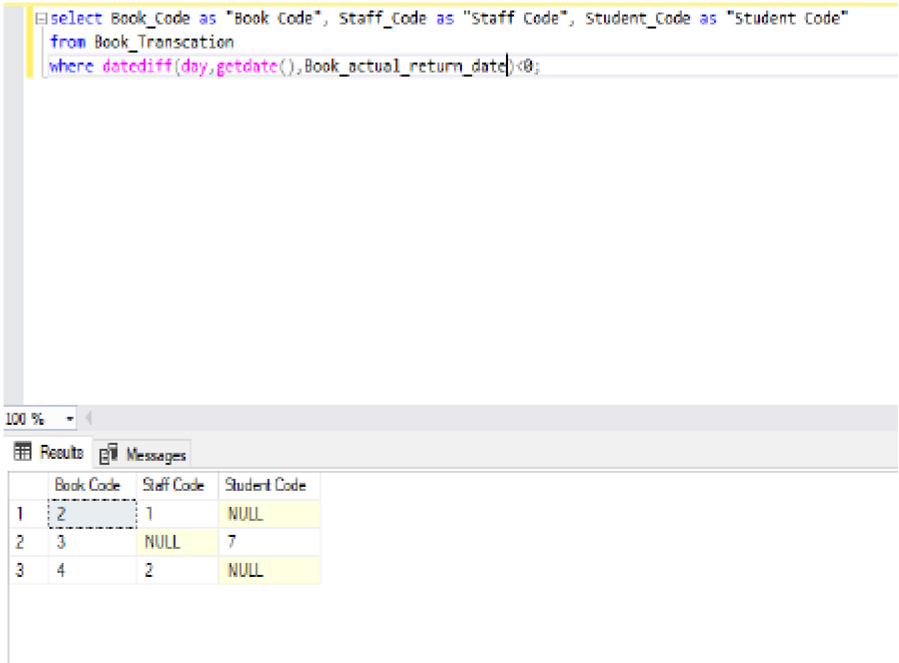
2.



```sql
create function salexx(@Staff_sal as decimal(10,2))
returns nvarchar(50)
begin
declare @variable as nvarchar(200)
set @variable = 'X'
declare @counts as int
set @counts = (@Staff_sal/1000);
while @counts>0
begin
set @variable=@variable + 'X'
set @counts=@counts-1;
end;
RETURN @variable;
end

select Staff_Name,Staff_sal, dbo.salexx(Staff_sal) as "Hidden"
from Staff_Master;
```

| | Staff_Name | Staff_sal | Hidden |
|---|---|---|---|
| 1 | 1 | 21000.00 | XXXXXXXXXXXXXXXXXXXXXX |
| 2 | 2 | 22000.00 | XXXXXXXXXXXXXXXXXXXXXXX |
| 3 | 3 | 23000.00 | XXXXXXXXXXXXXXXXXXXXXXXX |
| 4 | 4 | 30000.00 | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |
| 5 | 5 | 20000.00 | XXXXXXXXXXXXXXXXXXXXX |
| 6 | 6 | 79000.00 | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |
| 7 | 999999 | 80000.00 | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |
| 8 | 777777 | 97000.00 | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |

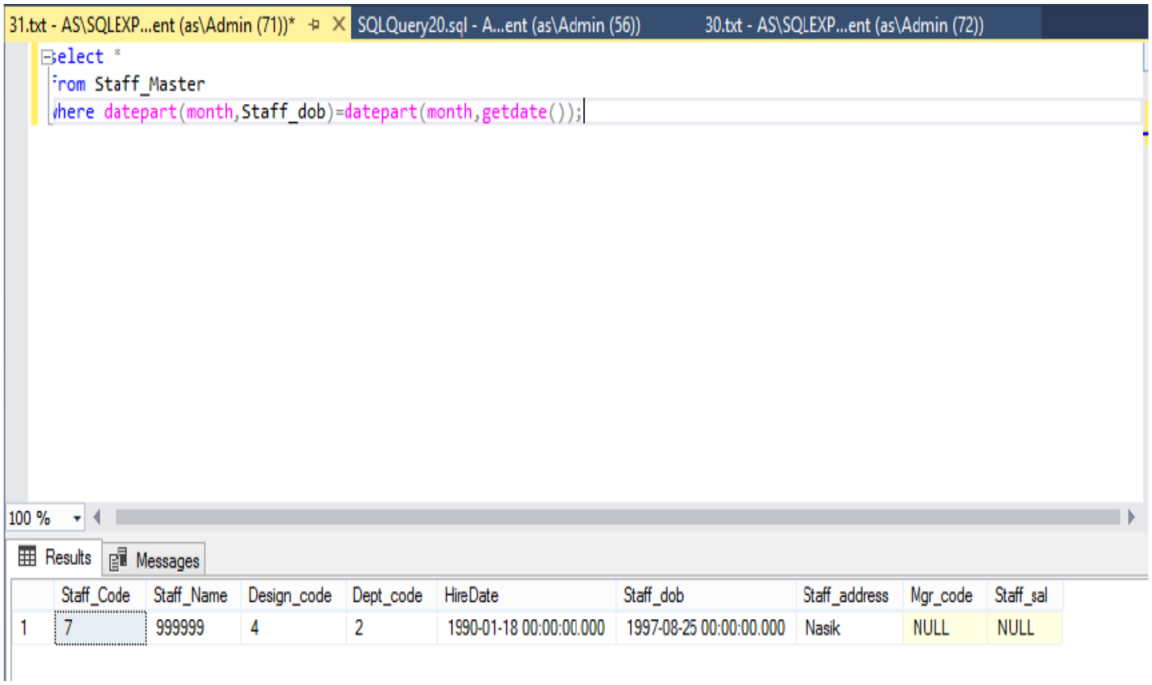
**3.**



```
select Book_Code as "Book Code", Staff_Code as "Staff Code", Student_Code as "Student Code"
from Book_Transcation
where datediff(day,getdate(),Book_actual_return_date)<0;
```

| | Book Code | Staff Code | Student Code |
|---|---|---|---|
| 1 | 2 | 1 | NULL |
| 2 | 3 | NULL | 7 |
| 3 | 4 | 2 | NULL |

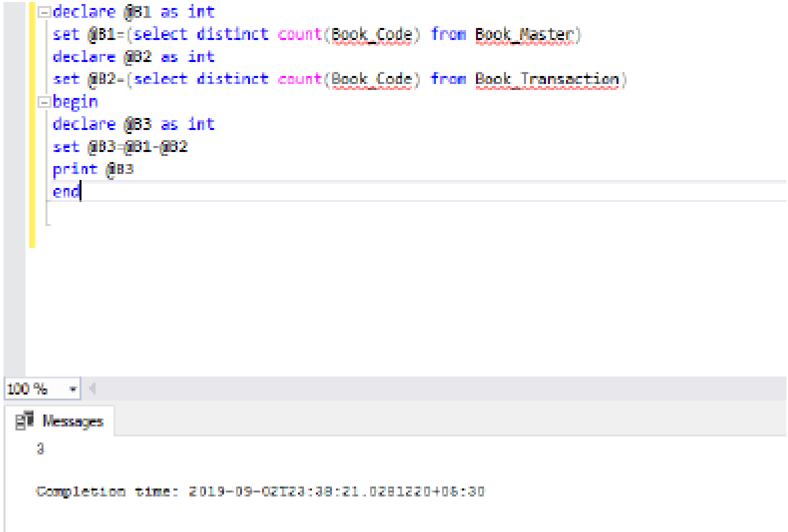
**4.**


31.txt - AS\SQLEXP...ent (as\Admin (71))*
SQLQuery20.sql - A...ent (as\Admin (56))
30.txt - AS\SQLEXP...ent (as\Admin (72))
100 %
Results
Messages

```
select *
from Staff_Master
where datepart(month,Staff_dob)=datepart(month,getdate());
```

| | Staff_Code | Staff_Name | Design_code | Dept_code | HireDate | Staff_dob | Staff_address | Mgr_code | Staff_sal |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 7 | 999999 | 4 | 2 | 1990-01-18 00:00:00.000 | 1997-08-25 00:00:00.000 | Nasik | NULL | NULL |

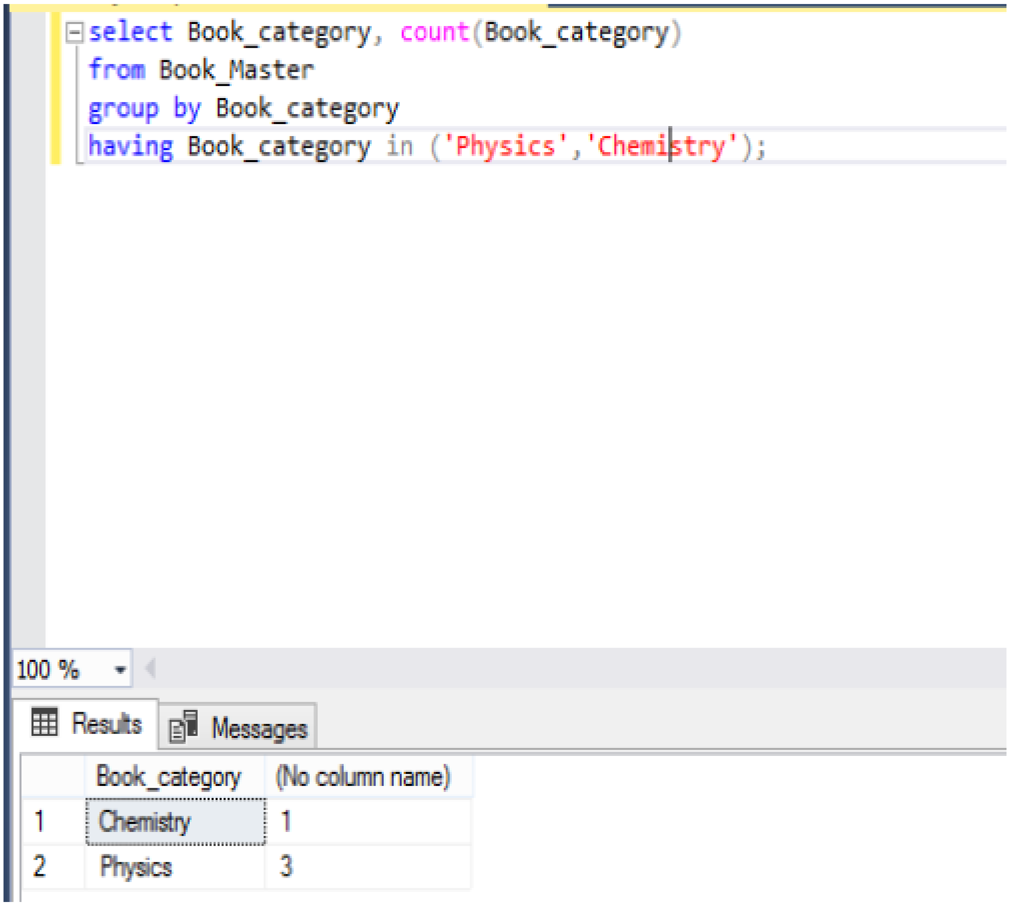
**5.**



```
declare @B1 as int
set @B1=(select distinct count(Book_Code) from Book_Master)
declare @B2 as int
set @B2=(select distinct count(Book_Code) from Book_Transaction)
begin
declare @B3 as int
set @B3=@B1-@B2
print @B3
end
```

```
3

Completion time: 2019-09-02T23:38:21.0281220+05:30
```

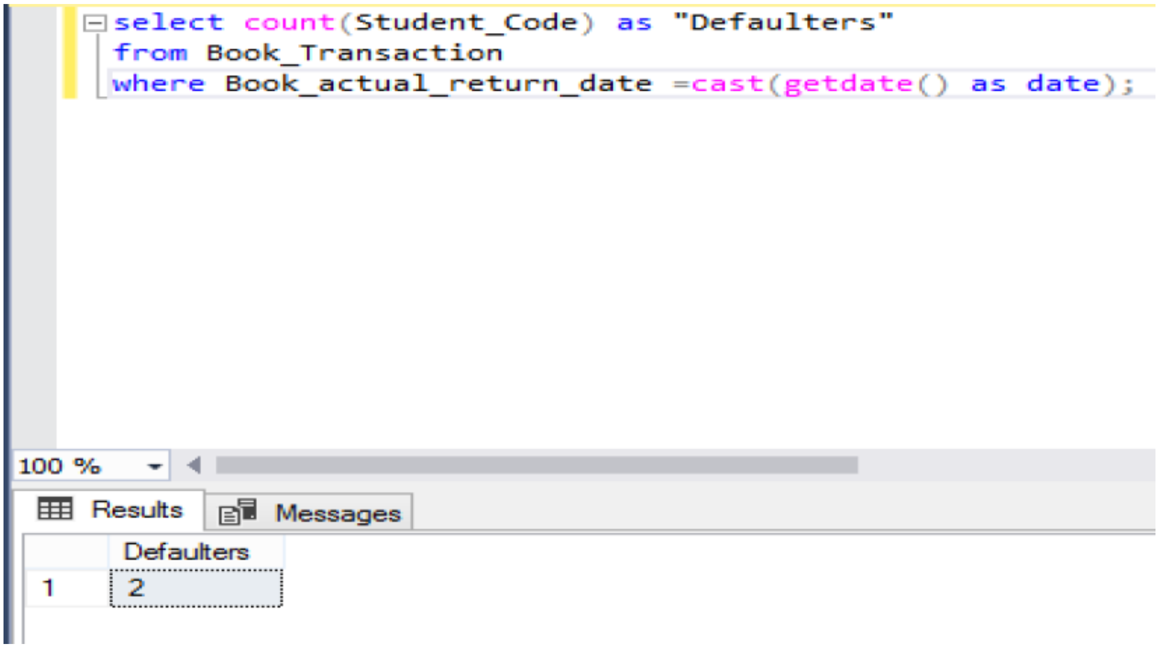
**6.**



```
select Book_category, count(Book_category)
from Book_Master
group by Book_category
having Book_category in ('Physics','Chemistry');
```

| | Book_category | (No column name) |
|---|---|---|
| 1 | Chemistry | 1 |
| 2 | Physics | 3 |

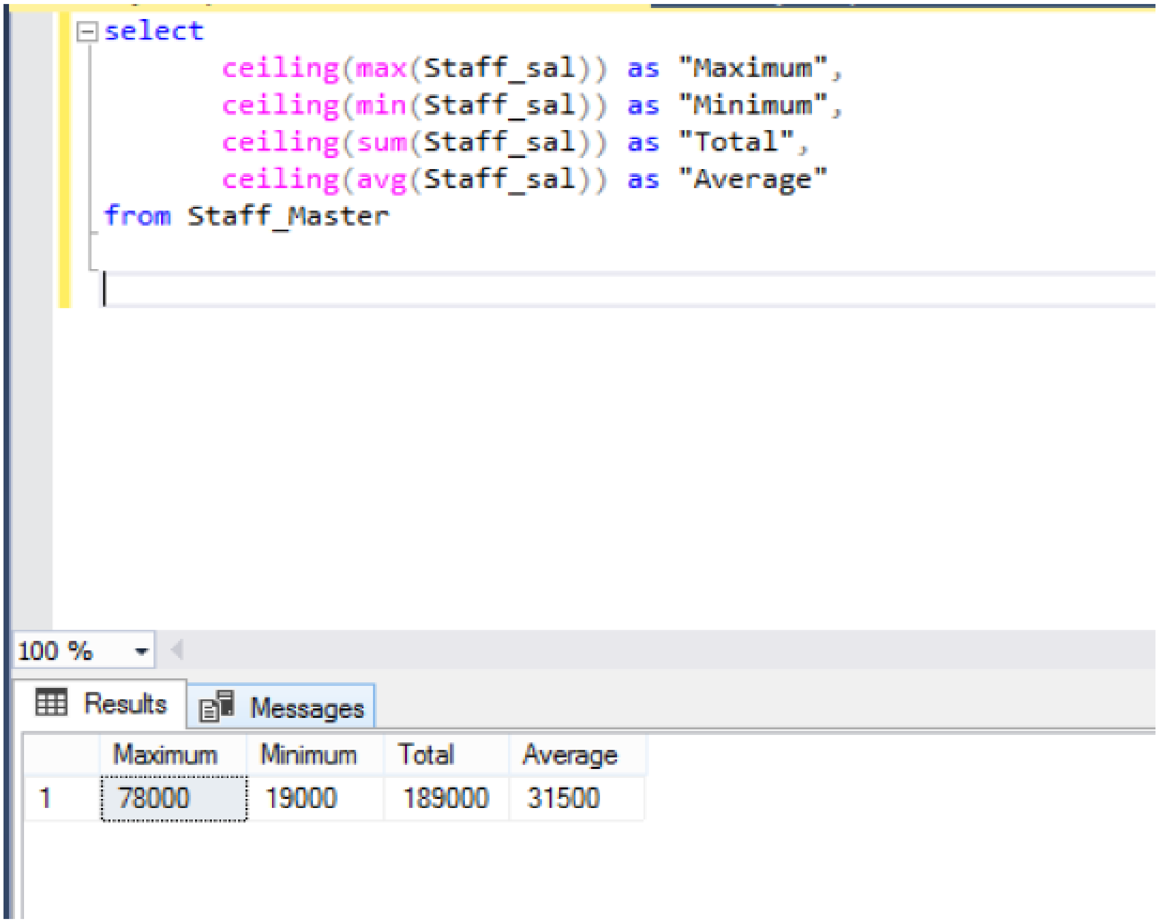
**7.**



```sql
select count(Student_Code) as "Defaulters"
from Book_Transaction
where Book_actual_return_date =cast(getdate() as date);
```

|   | Defaulters |
|---|---|
| 1 | 2 |

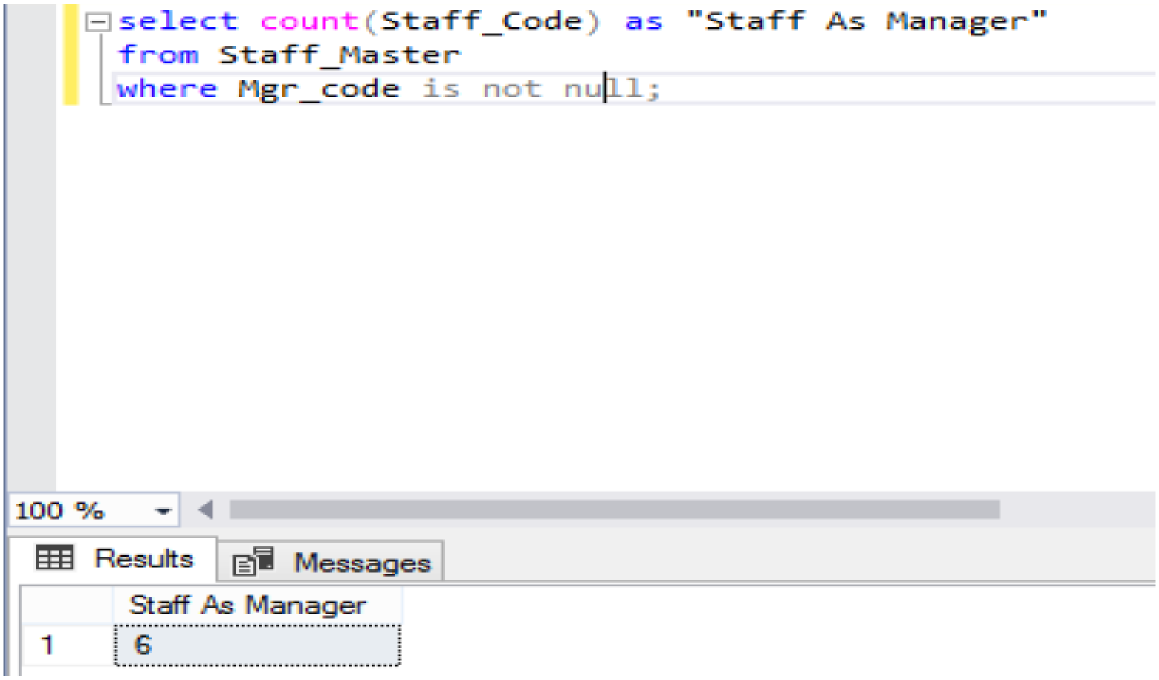
**8.**



```sql
select
        ceiling(max(Staff_sal)) as "Maximum",
        ceiling(min(Staff_sal)) as "Minimum",
        ceiling(sum(Staff_sal)) as "Total",
        ceiling(avg(Staff_sal)) as "Average"
from Staff_Master
```

|   | Maximum | Minimum | Total | Average |
|---|---|---|---|---|
| 1 | 78000 | 19000 | 189000 | 31500 |

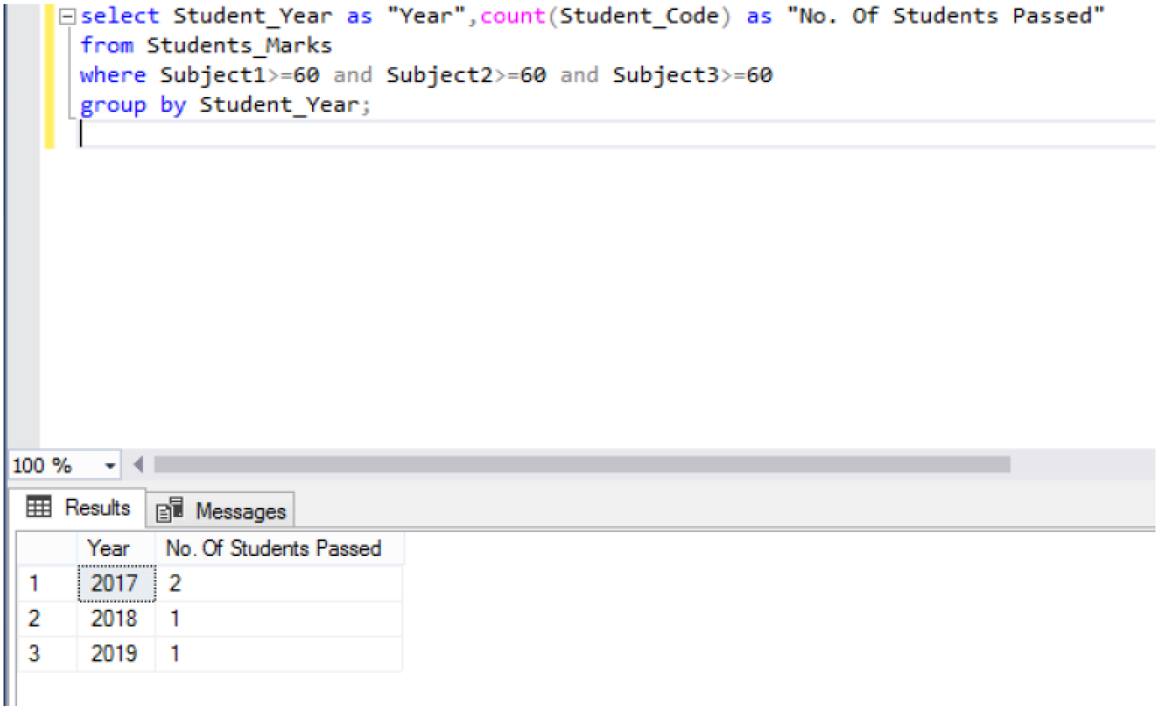
**9.**



```sql
select count(Staff_Code) as "Staff As Manager"
from Staff_Master
where Mgr_code is not null;
```

| | Staff As Manager |
|---|---|
| 1 | 6 |

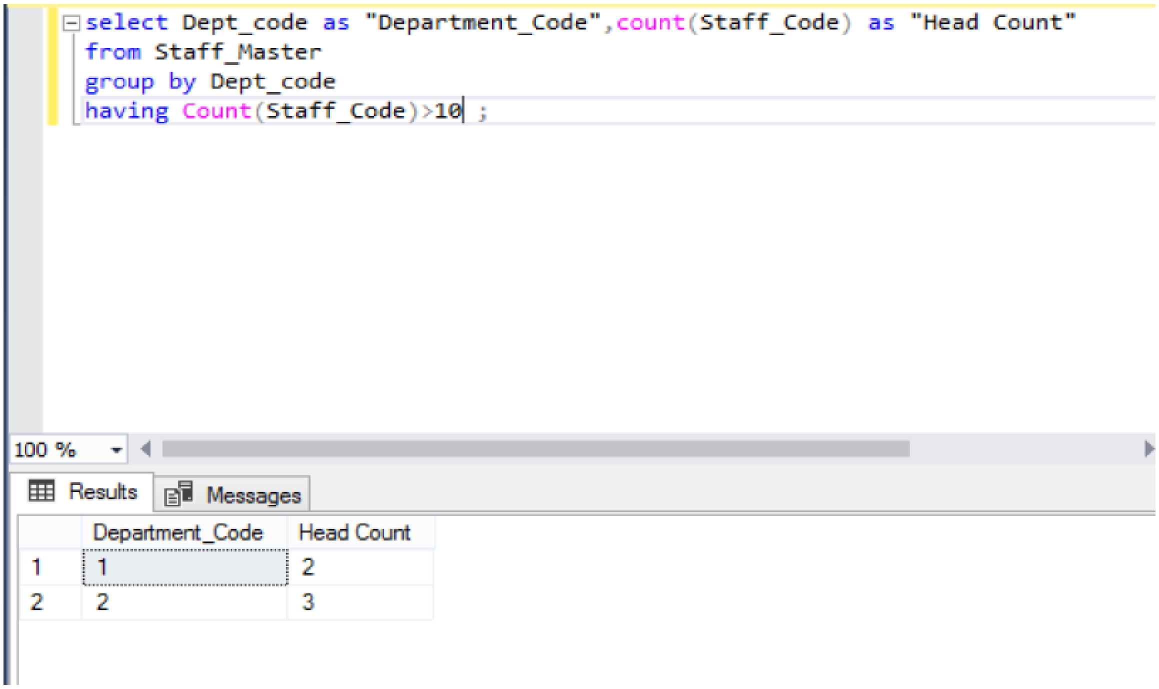
**10.**



```sql
select Student_Year as "Year",count(Student_Code) as "No. Of Students Passed"
from Students_Marks
where Subject1>=60 and Subject2>=60 and Subject3>=60
group by Student_Year;
```

| | Year | No. Of Students Passed |
|---|---|---|
| 1 | 2017 | 2 |
| 2 | 2018 | 1 |
| 3 | 2019 | 1 |

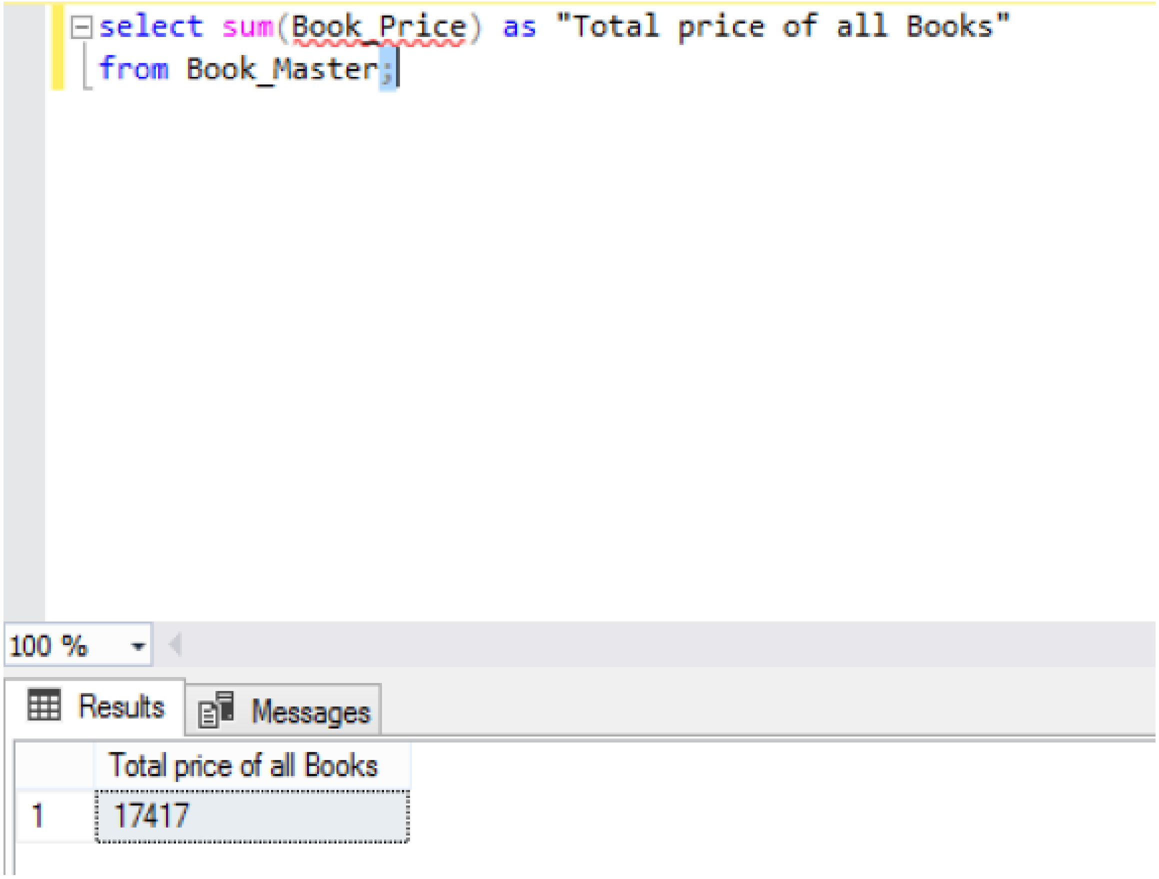
**11.**



```sql
select Dept_code as "Department_Code",count(Staff_Code) as "Head Count"
from Staff_Master
group by Dept_code
having Count(Staff_Code)>10 ;
```

|   | Department_Code | Head Count |
|---|---|---|
| 1 | 1 | 2 |
| 2 | 2 | 3 |

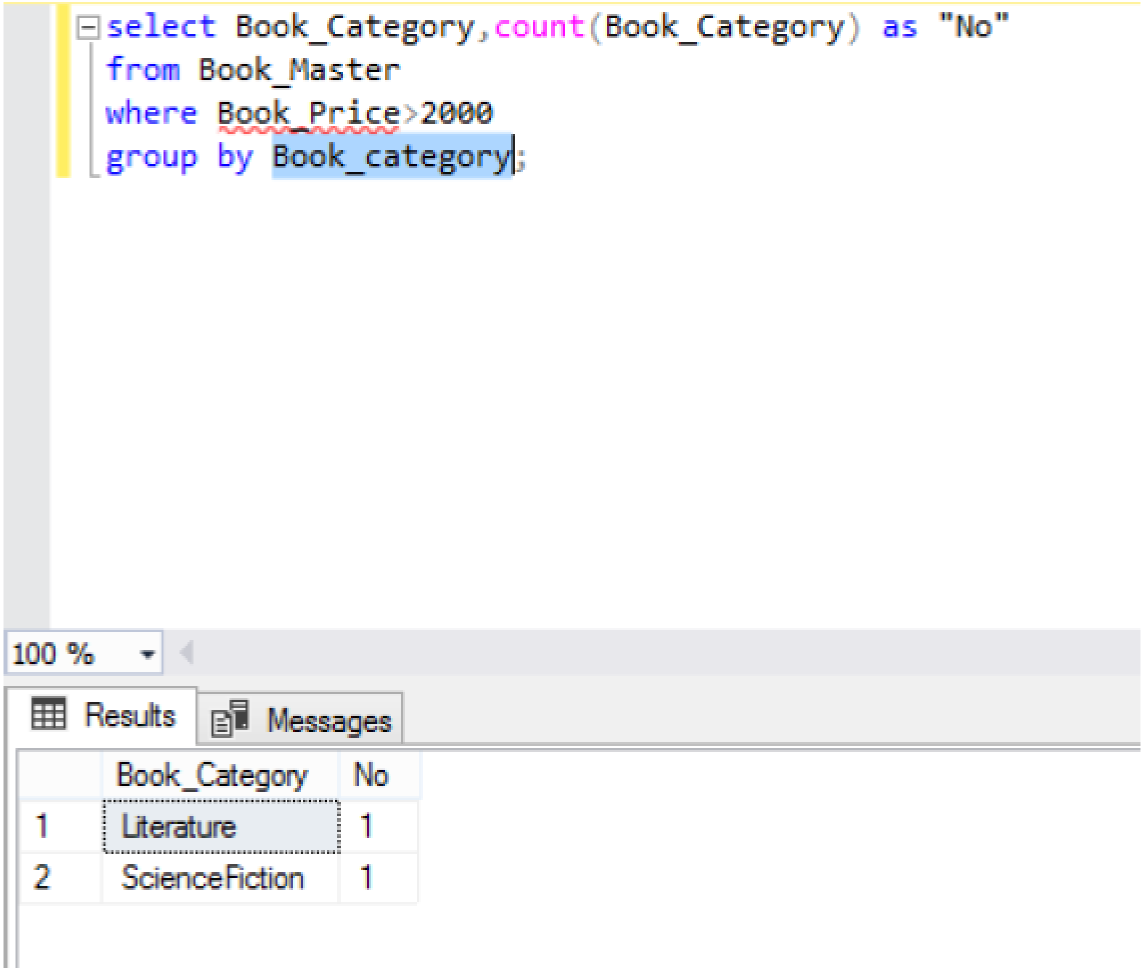
**12.**



```sql
select sum(Book_Price) as "Total price of all Books"
from Book_Master;
```

|   | Total price of all Books |
|---|---|
| 1 | 17417 |

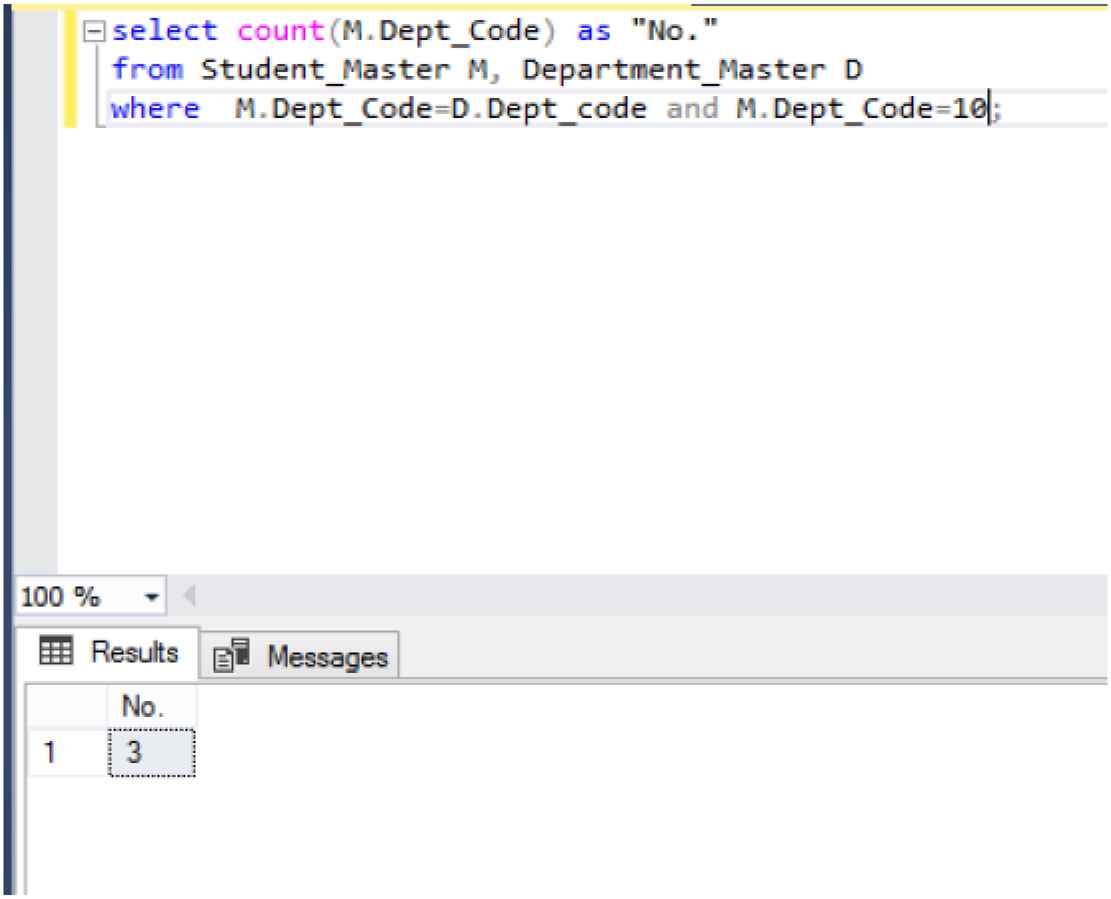
**13.**



```
select Book_Category,count(Book_Category) as "No"
from Book_Master
where Book_Price>2000
group by Book_category;
```

```
  Book_Category  No
1 Literature     1
2 ScienceFiction 1
```

**14.**

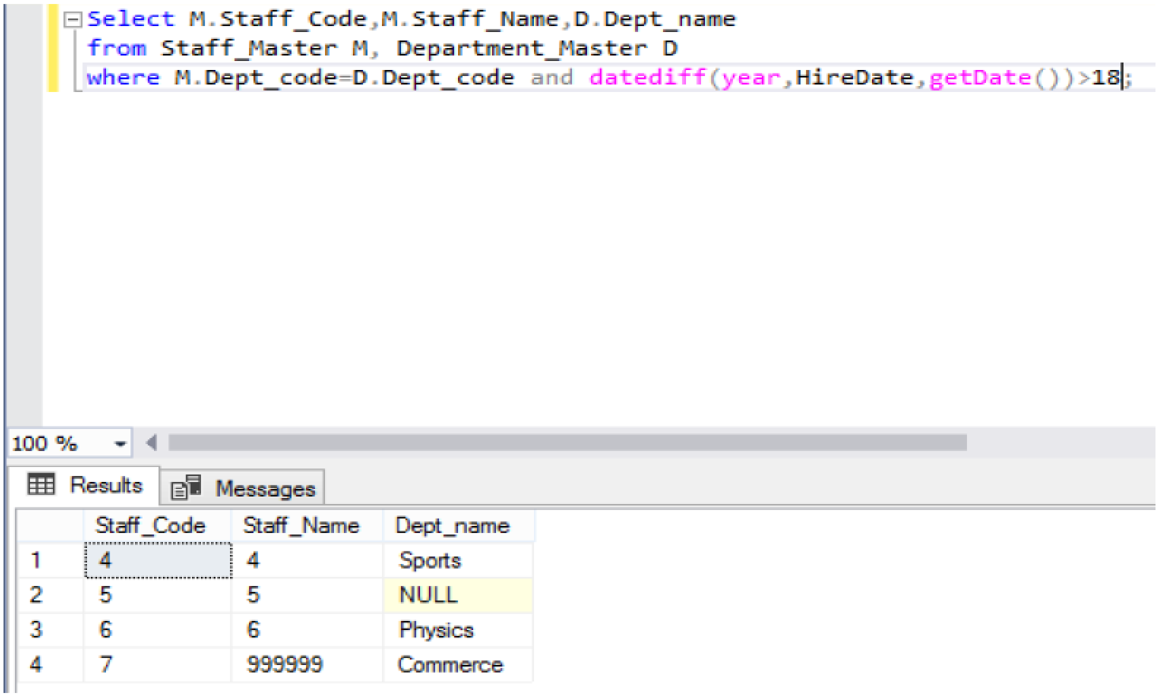


```sql
select count(M.Dept_Code) as "No."
from Student_Master M, Department_Master D
where  M.Dept_Code=D.Dept_code and M.Dept_Code=10;
```

|   | No. |
|---|---|
| 1 | 3 |

## 2.2 Data Retrieval - Joins, Subqueries, SET Operators and DML

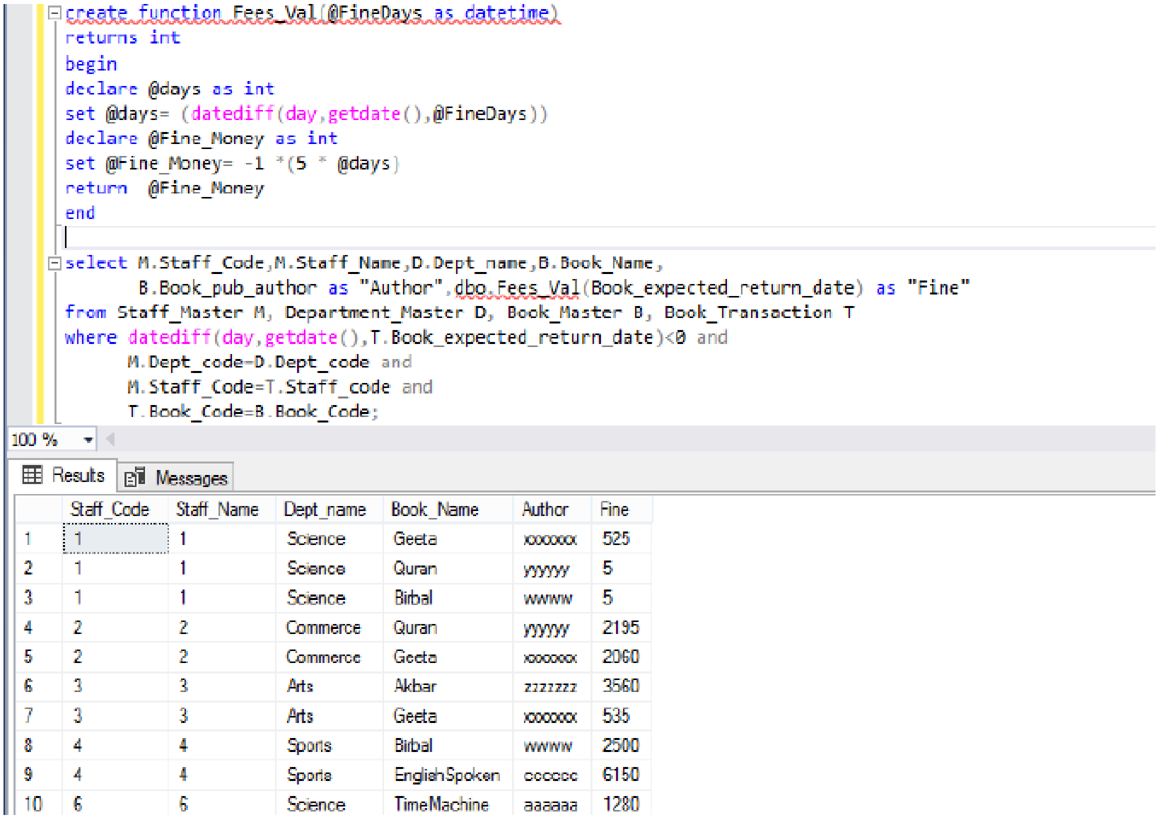
**1.**



```sql
Select M.Staff_Code,M.Staff_Name,D.Dept_name
from Staff_Master M, Department_Master D
where M.Dept_code=D.Dept_code and datediff(year,HireDate,getDate())>18;
```

|   | Staff_Code | Staff_Name | Dept_name |
|---|---|---|---|
| 1 | 4 | 4 | Sports |
| 2 | 5 | 5 | NULL |
| 3 | 6 | 6 | Physics |
| 4 | 7 | 999999 | Commerce |

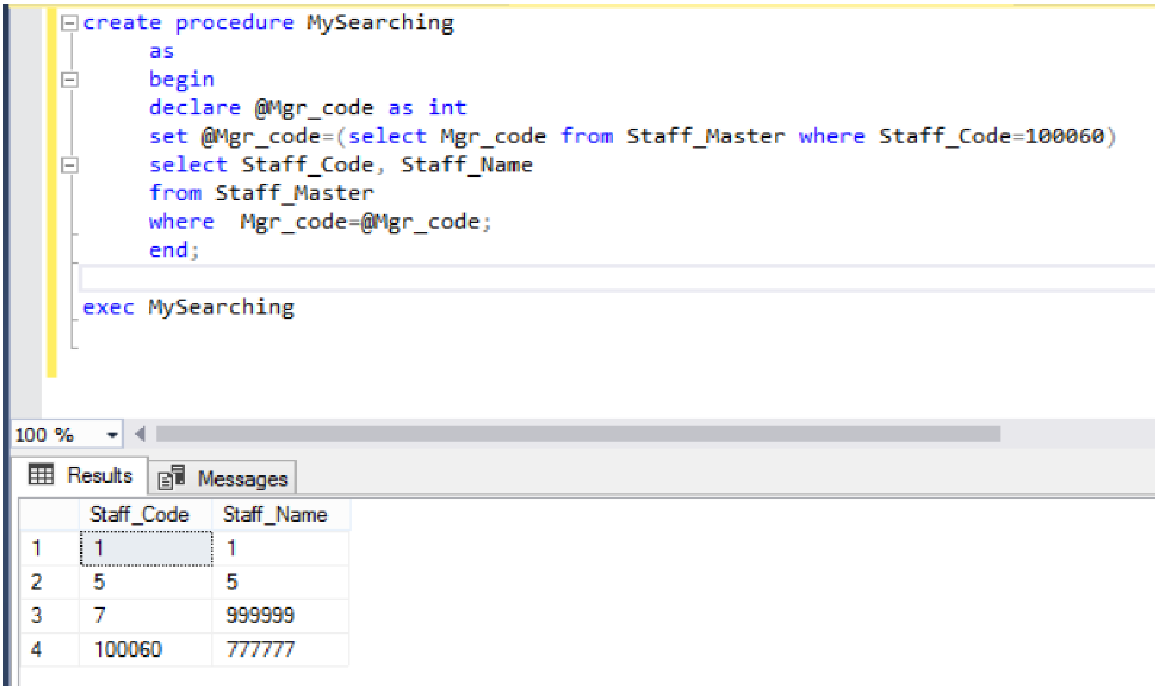
**2.**



```sql
create function Fees_Val(@FineDays as datetime)
returns int
begin
declare @days as int
set @days= (datediff(day,getdate(),@FineDays))
declare @Fine_Money as int
set @Fine_Money= -1 *(5 * @days)
return  @Fine_Money
end

select M.Staff_Code,M.Staff_Name,D.Dept_name,B.Book_Name,
       B.Book_pub_author as "Author",dbo.Fees_Val(Book_expected_return_date) as "Fine"
from Staff_Master M, Department_Master D, Book_Master B, Book_Transaction T
where datediff(day,getdate(),T.Book_expected_return_date)<0 and
      M.Dept_code=D.Dept_code and
      M.Staff_Code=T.Staff_code and
      T.Book_Code=B.Book_Code;
```

| | Staff_Code | Staff_Name | Dept_name | Book_Name | Author | Fine |
|---|---|---|---|---|---|---|
| 1 | 1 | 1 | Science | Geeta | xxxxxxx | 525 |
| 2 | 1 | 1 | Science | Quran | yyyyy | 5 |
| 3 | 1 | 1 | Science | Birbal | wwww | 5 |
| 4 | 2 | 2 | Commerce | Quran | yyyyy | 2195 |
| 5 | 2 | 2 | Commerce | Geeta | xxxxxxx | 2060 |
| 6 | 3 | 3 | Arts | Akbar | zzzzzzz | 3560 |
| 7 | 3 | 3 | Arts | Geeta | xxxxxxx | 535 |
| 8 | 4 | 4 | Sports | Birbal | wwww | 2500 |
| 9 | 4 | 4 | Sports | EnglishSpoken | cccccc | 6150 |
| 10 | 6 | 6 | Science | TimeMachine | aaaaaa | 1280 |

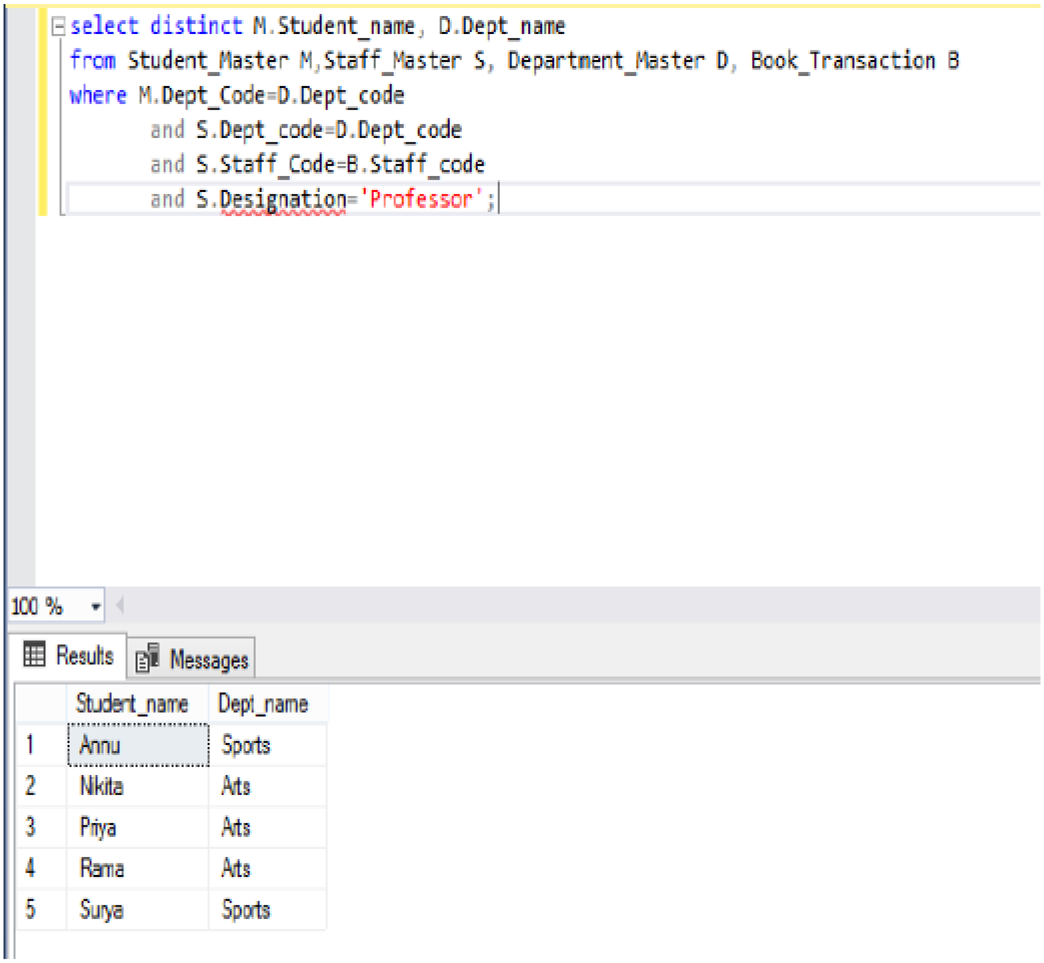
**3.**



```sql
create procedure MySearching
       as
       begin
       declare @Mgr_code as int
       set @Mgr_code=(select Mgr_code from Staff_Master where Staff_Code=100060)
       select Staff_Code, Staff_Name
       from Staff_Master
       where  Mgr_code=@Mgr_code;
       end;

exec MySearching
```

| | Staff_Code | Staff_Name |
|---|---|---|
| 1 | 1 | 1 |
| 2 | 5 | 5 |
| 3 | 7 | 999999 |
| 4 | 100060 | 777777 |

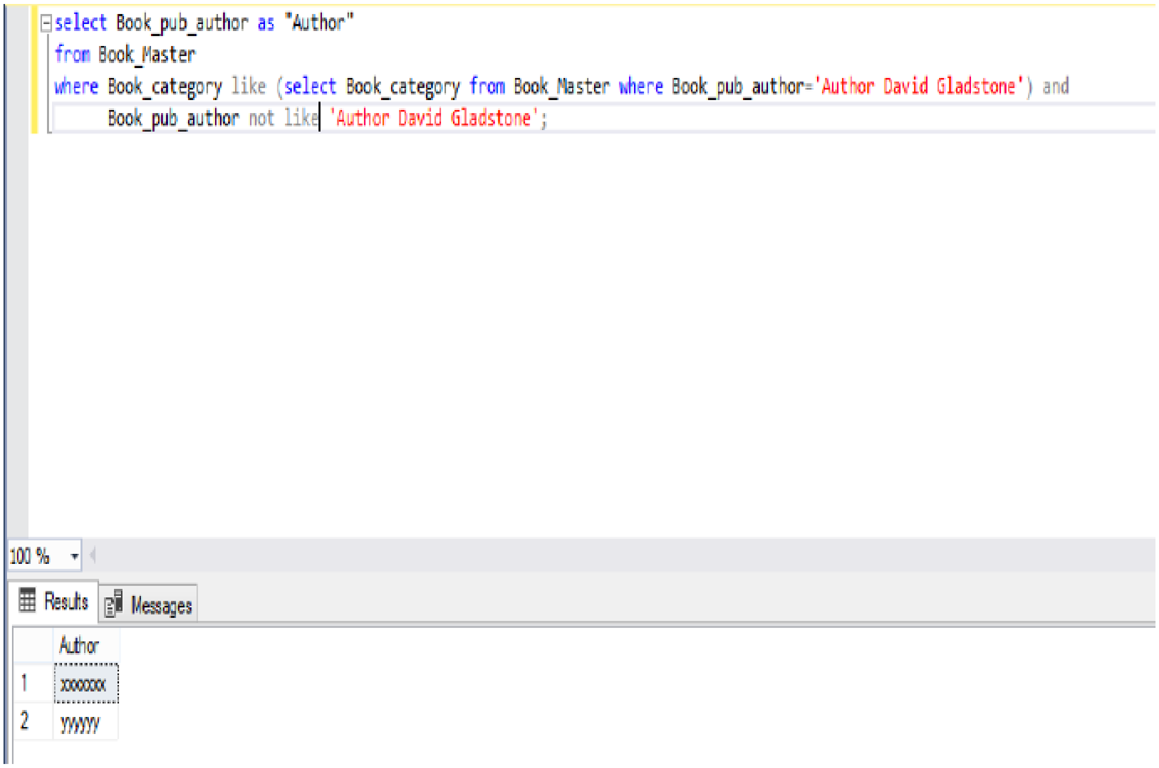
**4.**



```sql
select distinct M.Student_name, D.Dept_name
from Student_Master M,Staff_Master S, Department_Master D, Book_Transaction B
where M.Dept_Code=D.Dept_code
        and S.Dept_code=D.Dept_code
        and S.Staff_Code=B.Staff_code
        and S.Designation='Professor';
```

| | Student_name | Dept_name |
|---|---|---|
| 1 | Annu | Sports |
| 2 | Nikita | Arts |
| 3 | Priya | Arts |
| 4 | Rama | Arts |
| 5 | Surya | Sports |

**5.**

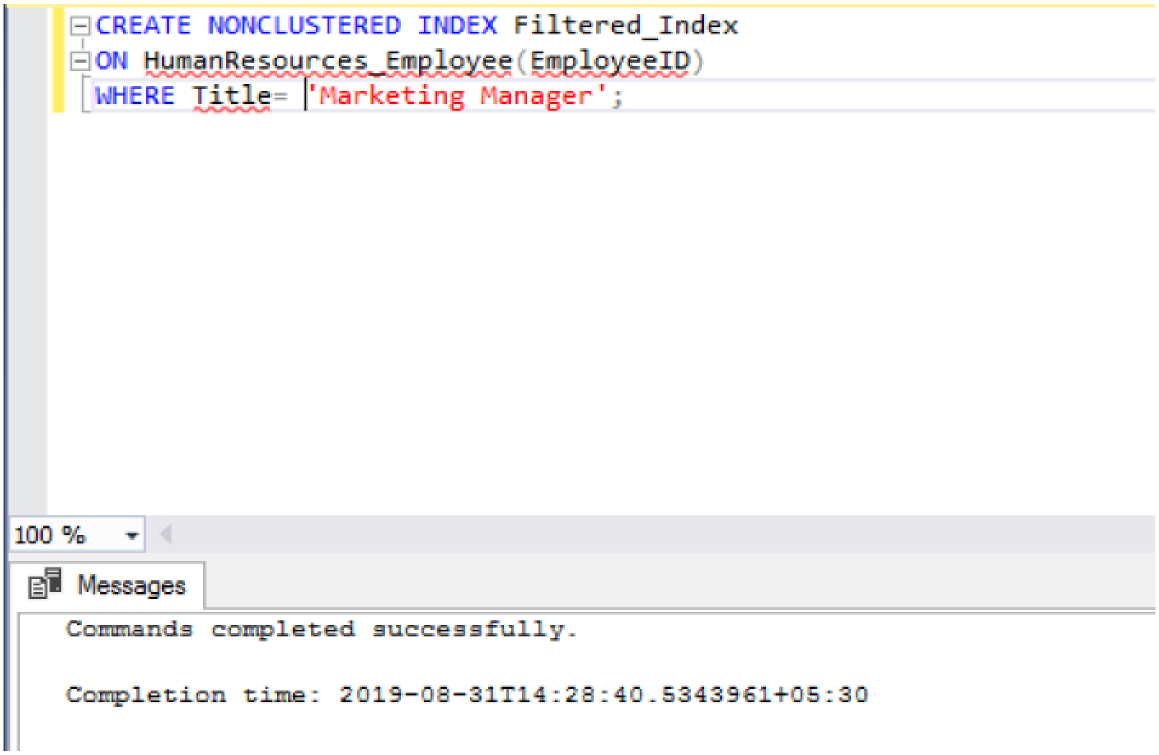


```sql
select Book_pub_author as "Author"
from Book_Master
where Book_category like (select Book_category from Book_Master where Book_pub_author='Author David Gladstone') and
      Book_pub_author not like 'Author David Gladstone';
```

|   | Author |
|---|---|
| 1 | xxxxxxx |
| 2 | yyyyy |

## 2.3 Indexes and Views

### 1.



```sql
CREATE NONCLUSTERED INDEX Filtered_Index
ON HumanResources_Employee(EmployeeID)
WHERE Title= 'Marketing Manager';
```

```
Commands completed successfully.

Completion time: 2019-08-31T14:28:40.5343961+05:30
```