A Project Report

on

Retail Management System

carried out as part of the RDBMS LAB (CC2231) Submitted by

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209303197

4th Semester in B.Tech. (CCE)

in partial fulfilment for the award of the degree

of

BACHELOR OF TECHNOLOGY

In

Computer & Communication Engineering

INSPIRED BY LIFE
MANIPAL UNIVERSITY
JAIPUR

Department of Computer & Communication Engineering,
School of Computing and IT,
Manipal University Jaipur,
May, 2022

CERTIFICATE

This is to certify that the project entitled "***(Retail Management System)***" is a bonafide work carried out as part of the course ***(B.Tech./RDBMS Lab)*** , under my guidance by ***(Dhruv Chaudhary)*** , student of ***(CCE 4th Semester)*** at the Department of Computer & Communication Engineering , Manipal University Jaipur, during the academic semester ***(4th semester)*** , in partial fulfilment of the requirements for the award of the degree of Bachelor of Technology in Computer & Communication Engineering, at MUJ, Jaipur.

Place:

Date: Signature of the Instructor (s)

DECLARATION

I hereby declare that the project entitled **"*(Retail Management System)*"** submitted as part of the partial course requirements for the course ***(RDBMS Lab),*** for the award of the degree of Bachelor of Technology in Computer & Communication Engineering at Manipal University Jaipur during the ***(4th Semester, May 2022)*** semester, has been carried out by me. I declare that the project has not formed the basis for the award of any degree, associate ship, fellowship or any other similar titles elsewhere.

Further, I declare that I will not share, re-submit or publish the code, idea, framework and/or any publication that may arise out of this work for academic or profit purposes without obtaining the prior written consent of the Course Faculty Mentor and Course Instructor.

Signature of the Student:

Place:

Date:

INDEX

INTRODUCTION

This Project was made with the idea of understanding the working and creation of database from the very scratch. This includes

- Creation of ER diagram for the database with proper input of keys and relations
- Converting the ER diagram into Relational Schema
- Using MySQL workbench 8.0 CE for the table creation and query execution
- Creation of a database, table and altering it.
- Insertion of Data
- Executing and working of DML, DLL, DCL commands

Retail management includes controlling all of the business processes and activity that helps customers acquire the desired products (merchandise), services, and experiences from the physical or digital retail stores they value.

Retail management system software (RMS) is the combination of technology a retailer uses to empower the customer experience and operate daily retail management processes, including software, hardware, telecommunications, databases, applications, and the point-of-sale (POS) platform.

All Retails need some variation of a management system. A Retail management system will help with operations of a retail store. This system will be built for a single store that can be scaled up to multiple stores. A Retail management system will have multiple benefits for stores such as:

The benefits of RMS often cited by vendors are:

- Actionable customer data
- Increased efficiency at the point of sale
- Enhanced inventory and merchandise management
- Superior financial transparency
- Improved security

HARDWARE AND SOFTWARE REQUIREMENTS

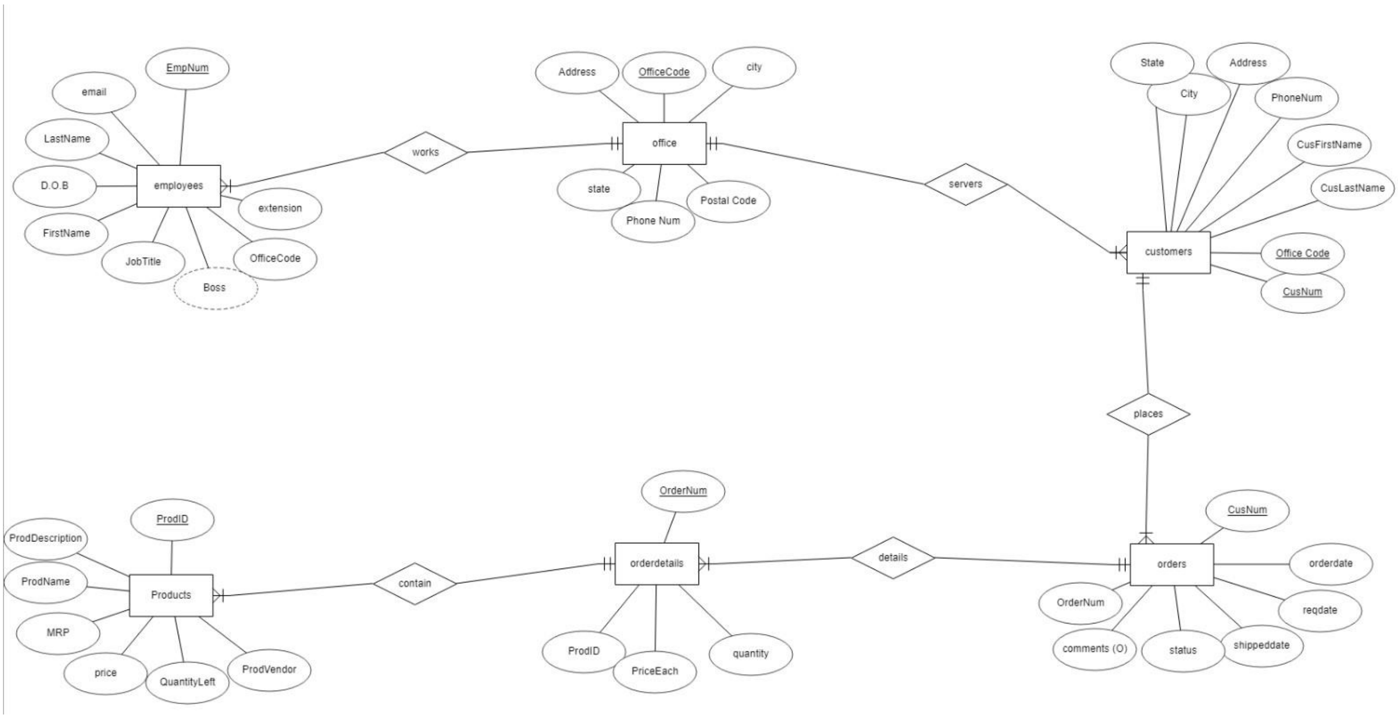
HARDWARE REQUIREMENTS:

- PC/Laptop
- Processor: Intel core i7
- RAM: 16GB
- Graphics: Nvidia GeForce RTX 2060

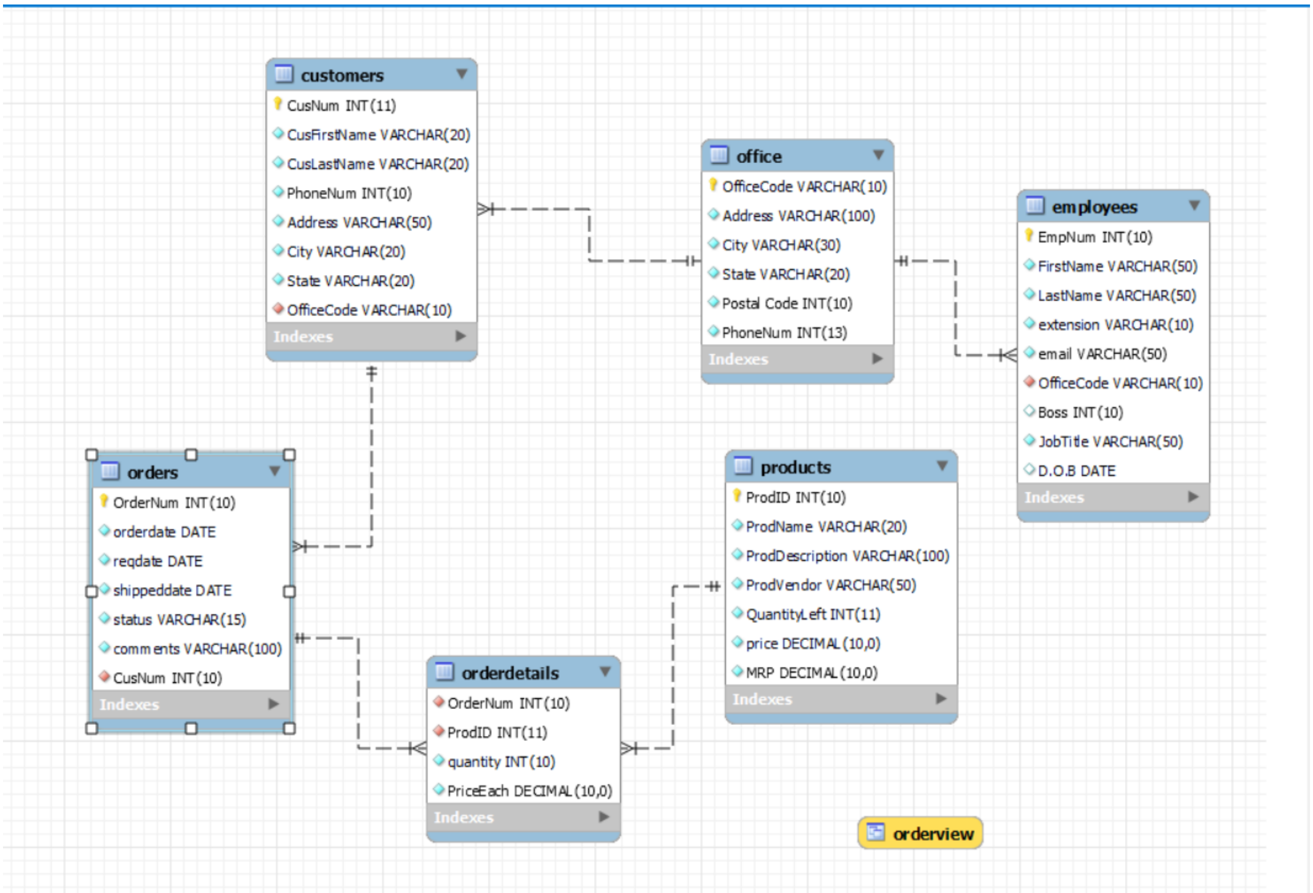
SOFTWARE REQUIREMENTS:

- ORACLE Application Express (APEX)
- SQL
- Windows 11
- OneNote

ER DIAGRAM


EmpNum
email
LastName
D.O.B
employees
FirstName
JobTitle
Boss
OfficeCode
extension
works
Address
OfficeCode
city
office
state
Phone Num
Postal Code
servers
State
Address
City
PhoneNum
CusFirstName
CusLastName
customers
Office Code
CusNum
places
ProdID
ProdDescription
ProdName
Products
MRP
price
QuantityLeft
ProdVendor
contain
OrderNum
orderdetails
ProdID
PriceEach
quantity
details
CusNum
orders
orderdate
OrderNum
reqdate
comments (O)
status
shippeddate

RELATIONAL SCHEMA



customers
- CusNum INT(11)
- CusFirstName VARCHAR(20)
- CusLastName VARCHAR(20)
- PhoneNum INT(10)
- Address VARCHAR(50)
- City VARCHAR(20)
- State VARCHAR(20)
- OfficeCode VARCHAR(10)
- Indexes

office
- OfficeCode VARCHAR(10)
- Address VARCHAR(100)
- City VARCHAR(30)
- State VARCHAR(20)
- Postal Code INT(10)
- PhoneNum INT(13)
- Indexes

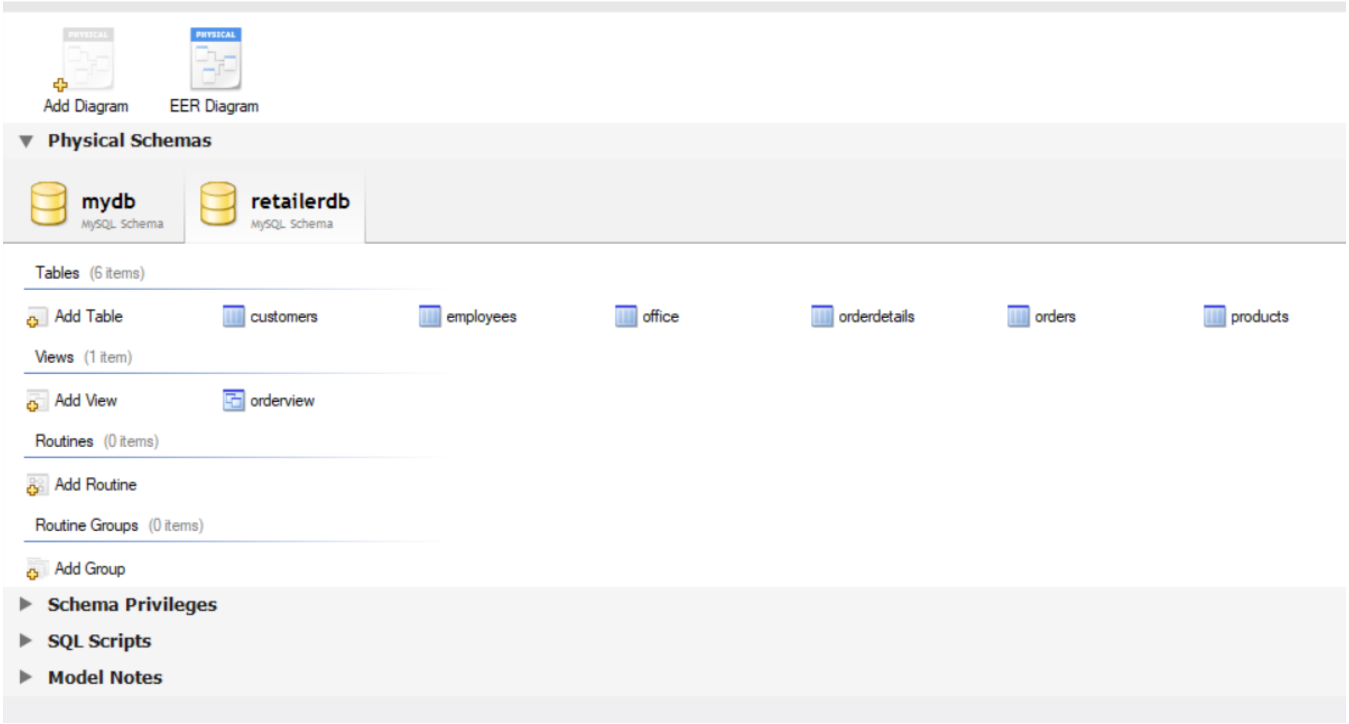
employees
- EmpNum INT(10)
- FirstName VARCHAR(50)
- LastName VARCHAR(50)
- extension VARCHAR(10)
- email VARCHAR(50)
- OfficeCode VARCHAR(10)
- Boss INT(10)
- JobTitle VARCHAR(50)
- D.O.B DATE
- Indexes

orders
- OrderNum INT(10)
- orderdate DATE
- reqdate DATE
- shippeddate DATE
- status VARCHAR(15)
- comments VARCHAR(100)
- CusNum INT(10)
- Indexes

products
- ProdID INT(10)
- ProdName VARCHAR(20)
- ProdDescription VARCHAR(100)
- ProdVendor VARCHAR(50)
- QuantityLeft INT(11)
- price DECIMAL(10,0)
- MRP DECIMAL(10,0)
- Indexes

orderdetails
- OrderNum INT(10)
- ProdID INT(11)
- quantity INT(10)
- PriceEach DECIMAL(10,0)
- Indexes

orderview



Tables (6 items)

Add Table | customers | employees | office | orderdetails | orders | products

Views (1 item)

Add View | orderview

Routines (0 items)

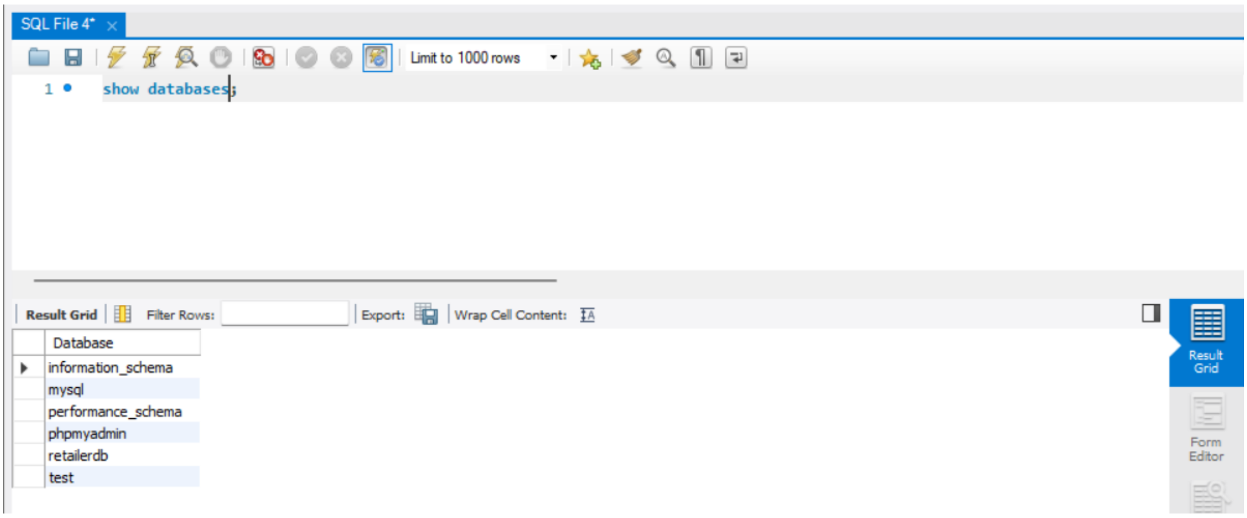
Add Routine

Routine Groups (0 items)

Add Group

DATABSE CREATION

CREATE DATABASE retaildb;



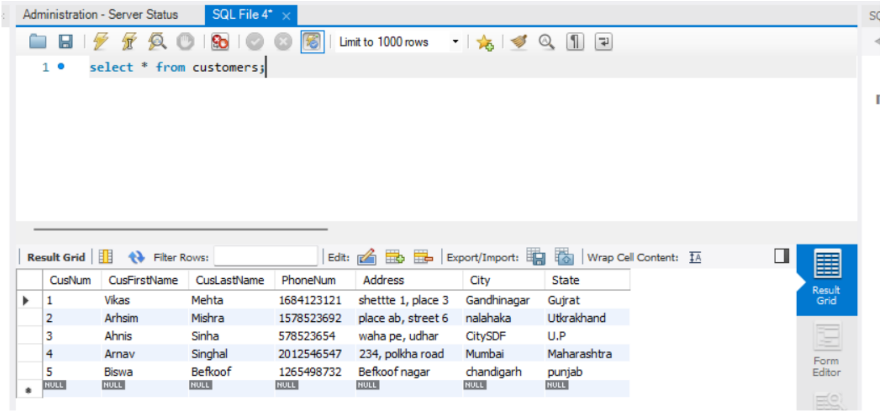
```
show databases;
```

Database
information_schema
mysql
performance_schema
phpmyadmin
retailerdb
test

TABLE CREATION AND INSERTION OF VALUES

1. **Customers table**

```
CREATE TABLE `retailerdb`.`customers`

( `CusNum` INT NOT NULL AUTO_INCREMENT ,

`CusFirstName` VARCHAR(20) NOT NULL ,

`CusLastName` VARCHAR(20) NOT NULL ,

`PhoneNum` INT(10) NOT NULL ,

`Address` VARCHAR(50) NOT NULL ,

`City` VARCHAR(20) NOT NULL ,

`State` VARCHAR(20) NOT NULL ,

PRIMARY KEY (`CusNum`)) ENGINE = InnoDB;

INSERT INTO `customers` (`CusNum`, `CusFirstName`, `CusLastName`, `PhoneNum`, `Address`, `City`, `State`) VALUES ('001', 'Vikas', 'Mehta', '1684123121', 'shettte 1, place 3', 'Gandhinagar', 'Gujrat');

INSERT INTO `customers` (`CusNum`, `CusFirstName`, `CusLastName`, `PhoneNum`, `Address`, `City`, `State`) VALUES ('002', 'Arhsim', 'Mishra', '1578523692', 'place ab, street 6', 'nalahaka', 'Utkrakhand ');

INSERT INTO `customers` (`CusNum`, `CusFirstName`, `CusLastName`, `PhoneNum`, `Address`, `City`, `State`) VALUES ('003', 'Ahnis', 'Sinha', '0578523654', 'waha pe, udhar', 'CitySDF', 'U.P');

INSERT INTO `customers` (`CusNum`, `CusFirstName`, `CusLastName`, `PhoneNum`, `Address`, `City`, `State`) VALUES ('004', 'Arnav', 'Singhal', '2012546547', '234, polkha road', 'Mumbai', 'Maharashtra ');

INSERT INTO `customers` (`CusNum`, `CusFirstName`, `CusLastName`, `PhoneNum`, `Address`, `City`, `State`) VALUES ('005', 'Biswa', 'Befkoof', '1265498732', 'Befkoof nagar', 'chandigarh', 'punjab');
```

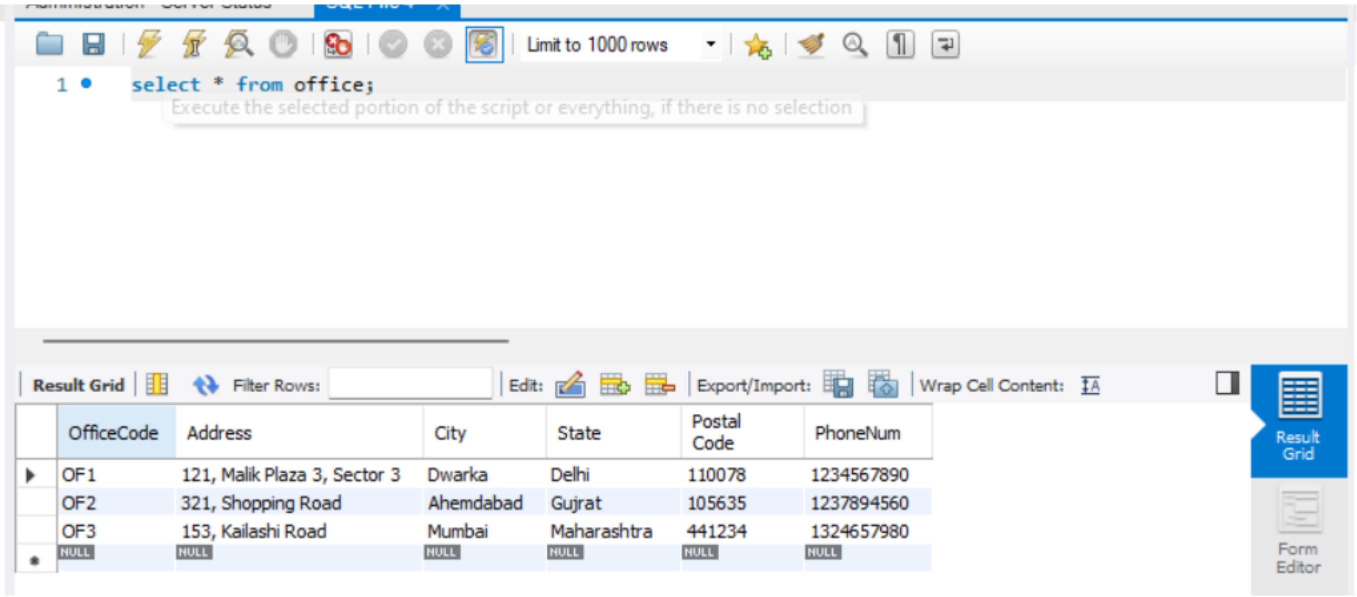


```
select * from customers;
```

CusNum	CusFirstName	CusLastName	PhoneNum	Address	City	State
1	Vikas	Mehta	1684123121	shettte 1, place 3	Gandhinagar	Gujrat
2	Arhsim	Mishra	1578523692	place ab, street 6	nalahaka	Utkrakhand
3	Ahnis	Sinha	578523654	waha pe, udhar	CitySDF	U.P
4	Arnav	Singhal	2012546547	234, polkha road	Mumbai	Maharashtra
5	Biswa	Befkoof	1265498732	Befkoof nagar	chandigarh	punjab
NULL	NULL	NULL	NULL	NULL	NULL	NULL

2. **Office table**

```
CREATE TABLE `retailerdb`.`office`

( `OfficeCode` VARCHAR(10) NOT NULL ,

`Address` INT(100) NOT NULL ,

`City` INT(30) NOT NULL ,

`State` INT(30) NOT NULL ,

`Postal Code` INT(6) NOT NULL ,

`PhoneNum` INT(13) NOT NULL ,

PRIMARY KEY (`OfficeCode`)) ENGINE = InnoDB;

INSERT INTO `office` (`OfficeCode`, `Address`, `City`, `State`, `Postal Code`, `PhoneNum`) VALUES
('OF1', '121, Malik Plaza 3, Sector 3', 'Dwarka', 'Delhi', '110078', '1234567890');

INSERT INTO `office` (`OfficeCode`, `Address`, `City`, `State`, `Postal Code`, `PhoneNum`) VALUES
('OF2', '321, Shopping Road', 'Ahemdabad', 'Gujrat', '105635', '1237894560');

INSERT INTO `office` (`OfficeCode`, `Address`, `City`, `State`, `Postal Code`, `PhoneNum`) VALUES
('OF3', '153, Kailashi Road', 'Mumbai', 'Maharashtra ', '441234', '1324657980');
```



```
select * from office;
```

Execute the selected portion of the script or everything, if there is no selection

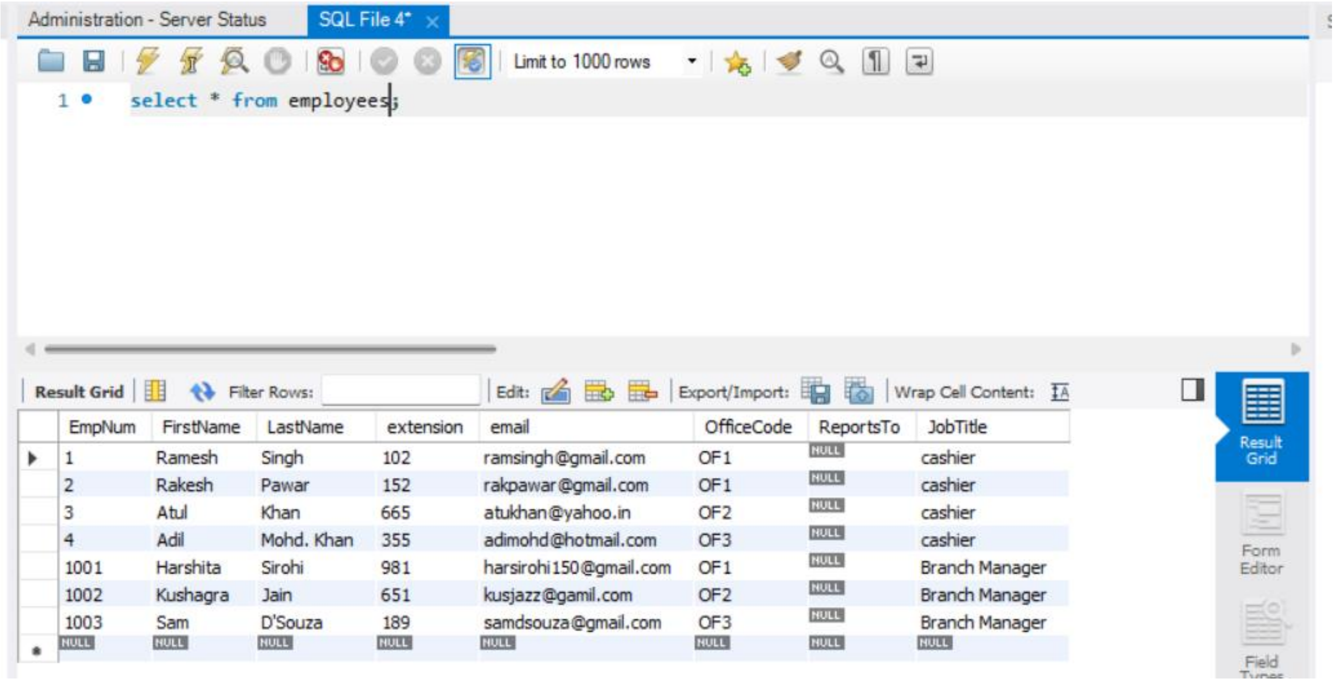
OfficeCode	Address	City	State	Postal Code	PhoneNum
OF1	121, Malik Plaza 3, Sector 3	Dwarka	Delhi	110078	1234567890
OF2	321, Shopping Road	Ahemdabad	Gujrat	105635	1237894560
OF3	153, Kailashi Road	Mumbai	Maharashtra	441234	1324657980
NULL	NULL	NULL	NULL	NULL	NULL

3. **Employee table**

```
CREATE TABLE `retailerdb`.`employees`

( `EmpNum` INT(10) NOT NULL AUTO_INCREMENT ,

`FirstName` VARCHAR(50) NOT NULL ,

`LastName` VARCHAR(50) NOT NULL ,

`extension` VARCHAR(10) NOT NULL ,

`email` VARCHAR(50) NOT NULL ,

`OfficeCode` VARCHAR(10) NOT NULL ,

`ReportsTo` INT(10) NULL DEFAULT NULL ,

`JobTitle` VARCHAR(50) NOT NULL ,

PRIMARY KEY (`EmpNum`), INDEX (`FirstName`),

INDEX (`LastName`),

FOREIGN KEY (`officeCode`) REFERENCES `offices` (`officeCode`) ON DELETE RESTRICT ON
UPDATE CASCADE) ENGINE = InnoDB;

INSERT INTO `employees` (`EmpNum`, `FirstName`, `LastName`, `extension`, `email`, `OfficeCode`,
`ReportsTo`, `JobTitle`) VALUES ('001', 'Ramesh', 'Singh', '102', 'ramsingh@gmail.com', 'OF1', NULL,
'cashier ');

INSERT INTO `employees` (`EmpNum`, `FirstName`, `LastName`, `extension`, `email`, `OfficeCode`,
`ReportsTo`, `JobTitle`) VALUES ('002', 'Rakesh', 'Pawar', '152', 'rakpawar@gmail.com', 'OF1', NULL,
'cashier');

INSERT INTO `employees` (`EmpNum`, `FirstName`, `LastName`, `extension`, `email`, `OfficeCode`,
`ReportsTo`, `JobTitle`) VALUES ('003', 'Atul', 'Khan', '665', 'atukhan@yahoo.in', 'OF2', NULL, 'cashier ');

INSERT INTO `employees` (`EmpNum`, `FirstName`, `LastName`, `extension`, `email`, `OfficeCode`,
`ReportsTo`, `JobTitle`) VALUES ('004', 'Adil', 'Mohd. Khan', '355', 'adimohd@hotmail.com', 'OF3', NULL,
'cashier ');

INSERT INTO `employees` (`EmpNum`, `FirstName`, `LastName`, `extension`, `email`, `OfficeCode`,
`ReportsTo`, `JobTitle`) VALUES ('005', 'Sam', 'D\'Souza', '189', 'samdsouza@gmail.com', 'OF3', NULL,
'Branch Manager');
```

```
INSERT INTO `employees` (`EmpNum`, `FirstName`, `LastName`, `extension`, `email`, `OfficeCode`, `ReportsTo`, `JobTitle`) VALUES ('1001', 'Harshita', 'Sirohi', '981', 'harsirohi150@gmail.com', 'OF1', NULL, 'Branch Manager');
```

```
INSERT INTO `employees` (`EmpNum`, `FirstName`, `LastName`, `extension`, `email`, `OfficeCode`, `ReportsTo`, `JobTitle`) VALUES ('1002', 'Kushagra', 'Jain', '651', 'kusjazz@gamil.com', 'OF2', NULL, 'Branch Manager');
```

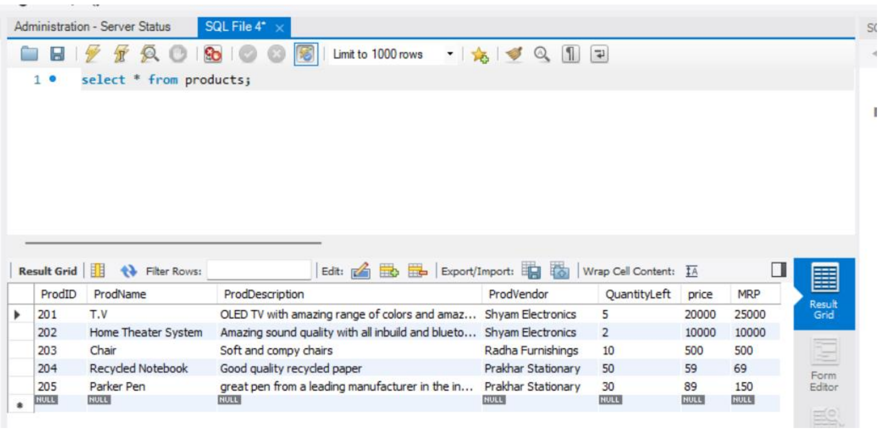


```
select * from employees;
```

EmpNum	FirstName	LastName	extension	email	OfficeCode	ReportsTo	JobTitle
1	Ramesh	Singh	102	ramsingh@gmail.com	OF1	NULL	cashier
2	Rakesh	Pawar	152	rakpawar@gmail.com	OF1	NULL	cashier
3	Atul	Khan	665	atukhan@yahoo.in	OF2	NULL	cashier
4	Adil	Mohd. Khan	355	adimohd@hotmail.com	OF3	NULL	cashier
1001	Harshita	Sirohi	981	harsirohi150@gmail.com	OF1	NULL	Branch Manager
1002	Kushagra	Jain	651	kusjazz@gamil.com	OF2	NULL	Branch Manager
1003	Sam	D'Souza	189	samdsouza@gmail.com	OF3	NULL	Branch Manager
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

4. Product table

```
CREATE TABLE `retailerdb`.`products`

( `ProdID` INT(10) NOT NULL AUTO_INCREMENT ,

`ProdName` VARCHAR(20) NOT NULL ,

`ProdDescription` VARCHAR(100) NOT NULL ,

`ProdVendor` VARCHAR(50) NOT NULL ,

`QuantityLeft` INT NOT NULL , `price` DECIMAL NOT NULL ,

`MRP` DECIMAL NOT NULL ,

PRIMARY KEY (`ProdID`)) ENGINE = InnoDB;

INSERT INTO `products` (`ProdID`, `ProdName`, `ProdDescription`, `ProdVendor`, `QuantityLeft`, `price`, `MRP`) VALUES ('201', 'T.V', 'OLED TV with amazing range of colors and amazing sound quality', 'Shyam Electronics', '5', '19999.99', '25000.00');

INSERT INTO `products` (`ProdID`, `ProdName`, `ProdDescription`, `ProdVendor`, `QuantityLeft`, `price`, `MRP`) VALUES ('202', 'Home Theater System', 'Amazing sound quality with all inbuild and bluetooth connectivity to have the best possible audio experience at your home', 'Shyam Electronics', '2', '10000', '10000');

INSERT INTO `products` (`ProdID`, `ProdName`, `ProdDescription`, `ProdVendor`, `QuantityLeft`, `price`, `MRP`) VALUES ('203', 'Chair', 'Soft and compy chairs', 'Radha Furnishings', '10', '500', '500');

INSERT INTO `products` (`ProdID`, `ProdName`, `ProdDescription`, `ProdVendor`, `QuantityLeft`, `price`, `MRP`) VALUES ('204', 'Recycled Notebook', 'Good quality recycled paper', 'Prakhar Stationary ', '50', '59', '69');

INSERT INTO `products` (`ProdID`, `ProdName`, `ProdDescription`, `ProdVendor`, `QuantityLeft`, `price`, `MRP`) VALUES ('205', 'Parker Pen', 'great pen from a leading manufacturer in the industry ', 'Prakhar Stationary ', '30', '89', '150');
```

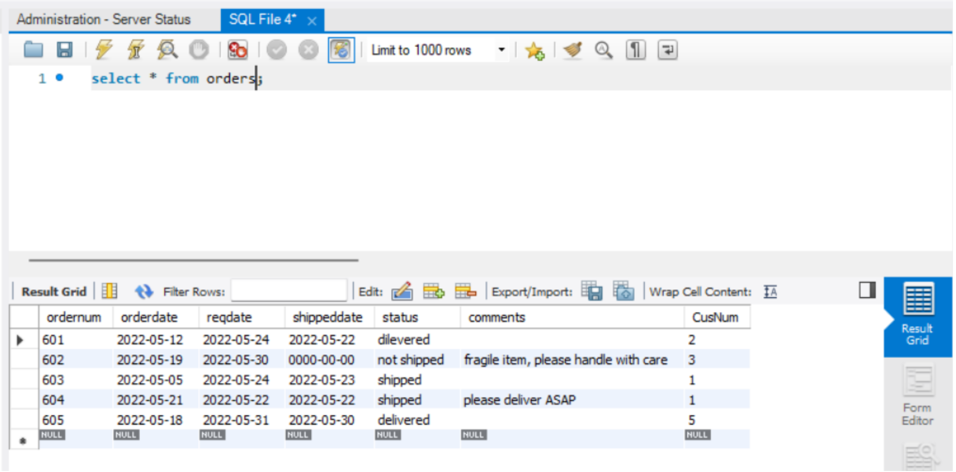


```
select * from products;
```

ProdID	ProdName	ProdDescription	ProdVendor	QuantityLeft	price	MRP
201	T.V	OLED TV with amazing range of colors and amaz...	Shyam Electronics	5	20000	25000
202	Home Theater System	Amazing sound quality with all inbuild and blueto...	Shyam Electronics	2	10000	10000
203	Chair	Soft and compy chairs	Radha Furnishings	10	500	500
204	Recycled Notebook	Good quality recycled paper	Prakhar Stationary	50	59	69
205	Parker Pen	great pen from a leading manufacturer in the in...	Prakhar Stationary	30	89	150
NULL	NULL	NULL	NULL	NULL	NULL	NULL

5. Orders table

```sql
CREATE TABLE `retailerdb`.`orders`

( `ordernum` INT(10) NOT NULL AUTO_INCREMENT ,

`orderdate` DATE NOT NULL ,

`reqdate` DATE NOT NULL ,

`shippeddate` DATE NOT NULL ,

`status` VARCHAR(15) NOT NULL ,

`comments` VARCHAR(100) NOT NULL ,

`CusNum` INT(10) NOT NULL ,

PRIMARY KEY (`ordernum`),

FOREIGN KEY (`CusNum`) REFERENCES `customers`(`CusNum`) ON DELETE RESTRICT ON UPDATE CASCADE) ENGINE = InnoDB;

INSERT INTO `orders` (`ordernum`, `orderdate`, `reqdate`, `shippeddate`, `status`, `comments`, `CusNum`) VALUES ('601', '2022-05-12', '2022-05-24', '2022-05-22', 'dilevered', '', '002');

INSERT INTO `orders` (`ordernum`, `orderdate`, `reqdate`, `shippeddate`, `status`, `comments`, `CusNum`) VALUES ('602', '2022-05-19', '2022-05-30', '', 'not shipped', 'fragile item, please handle with care', '003');

INSERT INTO `orders` (`ordernum`, `orderdate`, `reqdate`, `shippeddate`, `status`, `comments`, `CusNum`) VALUES ('603', '2022-05-05', '2022-05-24', '2022-05-23', 'shipped', '', '001');

INSERT INTO `orders` (`ordernum`, `orderdate`, `reqdate`, `shippeddate`, `status`, `comments`, `CusNum`) VALUES ('604', '2022-05-21', '2022-05-22', '2022-05-22', 'shipped', 'please deliver ASAP', '001');

INSERT INTO `orders` (`ordernum`, `orderdate`, `reqdate`, `shippeddate`, `status`, `comments`, `CusNum`) VALUES ('605', '2022-05-18', '2022-05-31', '2022-05-30', 'delivered ', '', '005');
```



```sql
select * from orders;
```

ordernum	orderdate	reqdate	shippeddate	status	comments	CusNum
601	2022-05-12	2022-05-24	2022-05-22	dilevered		2
602	2022-05-19	2022-05-30	0000-00-00	not shipped	fragile item, please handle with care	3
603	2022-05-05	2022-05-24	2022-05-23	shipped		1
604	2022-05-21	2022-05-22	2022-05-22	shipped	please deliver ASAP	1
605	2022-05-18	2022-05-31	2022-05-30	delivered		5
NULL	NULL	NULL	NULL	NULL	NULL	NULL

6. Orderdetails table

CREATE TABLE `retailerdb`.`orderdetails` (`OrderNum` INT UNSIGNED NOT NULL , `ProdID` INT NOT NULL , `quantity` INT UNSIGNED NOT NULL , `PriceEach` DECIMAL NOT NULL , PRIMARY KEY (`orderNum`,`prodCode`), FOREIGN KEY (`orderNum`) REFERENCES `orders` (`orderNum`) ON DELETE RESTRICT ON UPDATE CASCADE, FOREIGN KEY (`prodCode`) REFERENCES `products` (`prodCode`) ON DELETE RESTRICT ON UPDATE CASCADE) ENGINE = InnoDB;

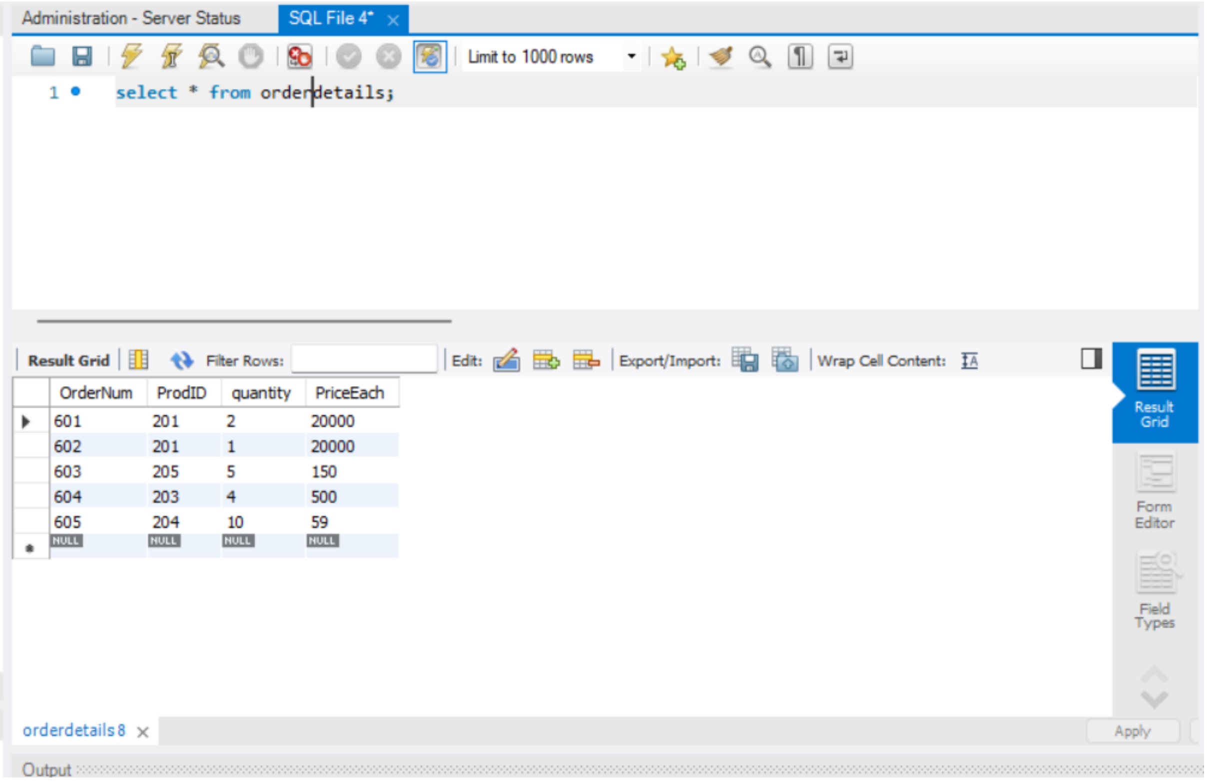
INSERT INTO `orderdetails` (`OrderNum`, `ProdID`, `quantity`, `PriceEach`) VALUES ('601', '201', '2', '19999.99');

INSERT INTO `orderdetails` (`OrderNum`, `ProdID`, `quantity`, `PriceEach`) VALUES ('602', '201', '1', '19999.99');

INSERT INTO `orderdetails` (`OrderNum`, `ProdID`, `quantity`, `PriceEach`) VALUES ('603', '205', '5', '150');

INSERT INTO `orderdetails` (`OrderNum`, `ProdID`, `quantity`, `PriceEach`) VALUES ('604', '203', '4', '500');

INSERT INTO `orderdetails` (`OrderNum`, `ProdID`, `quantity`, `PriceEach`) VALUES ('605', '204', '10', '59');



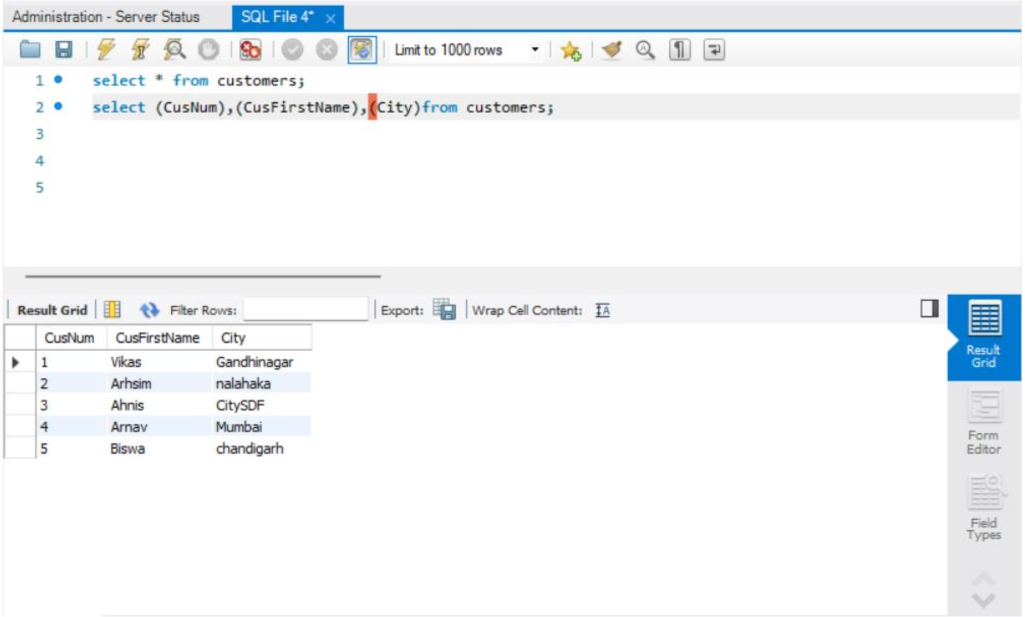
```
select * from orderdetails;
```

OrderNum	ProdID	quantity	PriceEach
601	201	2	20000
602	201	1	20000
603	205	5	150
604	203	4	500
605	204	10	59
NULL	NULL	NULL	NULL

QUERY EXECUTION

1. **Select Queries**

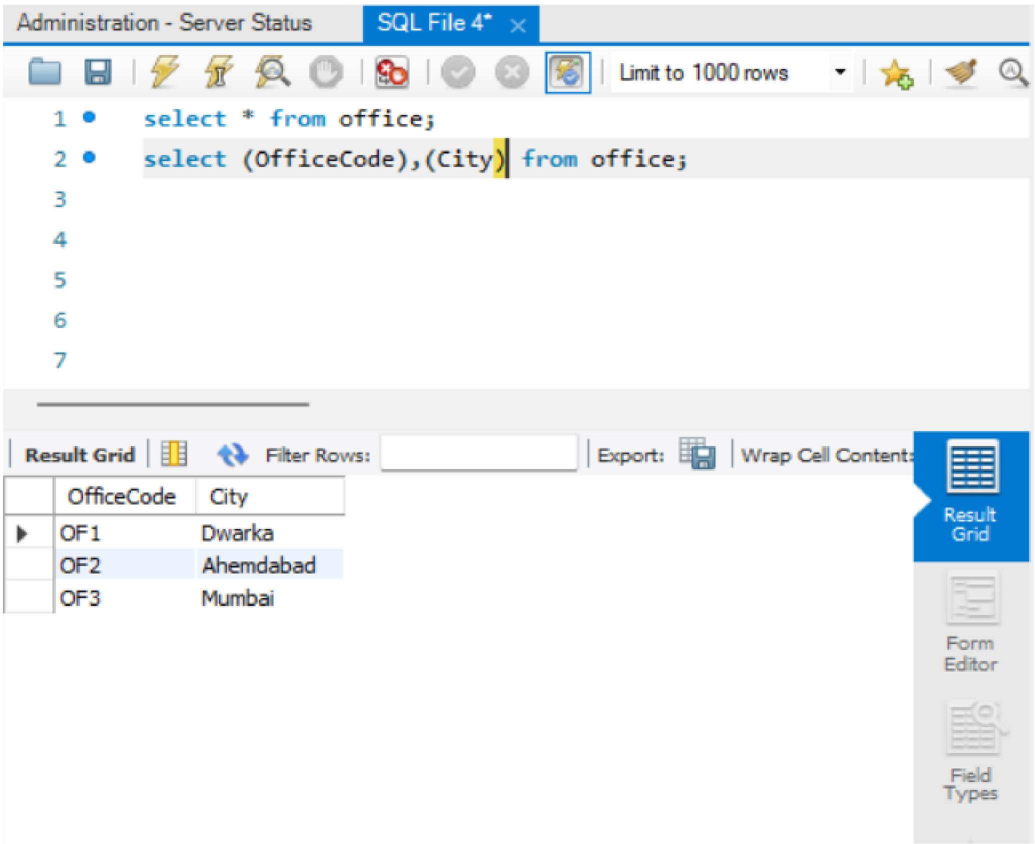
select (CusNum),(CusFirstName),(City)from customers;



```
select * from customers;
select (CusNum),(CusFirstName),(City)from customers;
```

CusNum	CusFirstName	City
1	Vikas	Gandhinagar
2	Arhsim	nalahaka
3	Ahnis	CitySDF
4	Arnav	Mumbai
5	Biswa	chandigarh

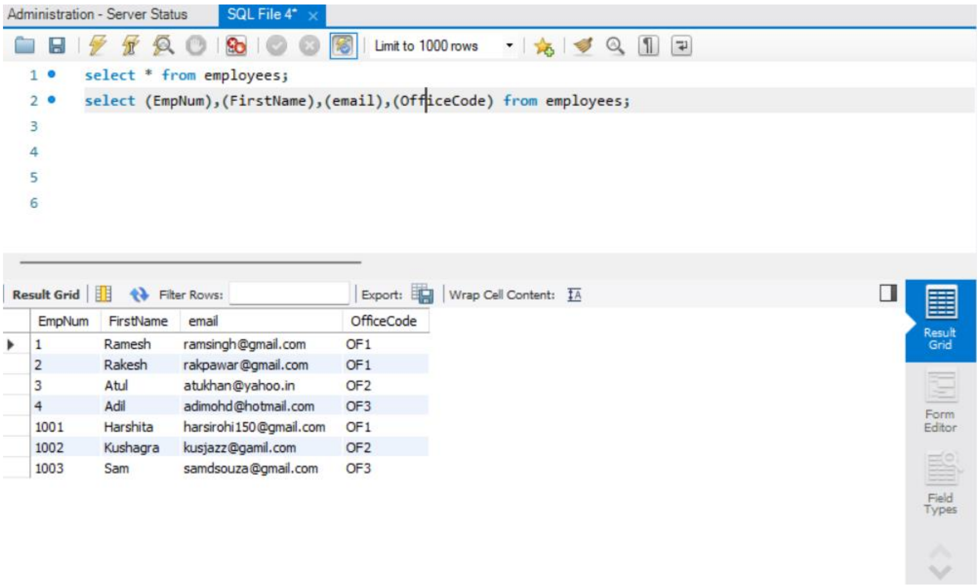
select (OfficeCode),(City) from office;



```
select * from office;
select (OfficeCode),(City) from office;
```

OfficeCode	City
OF1	Dwarka
OF2	Ahemdabad
OF3	Mumbai

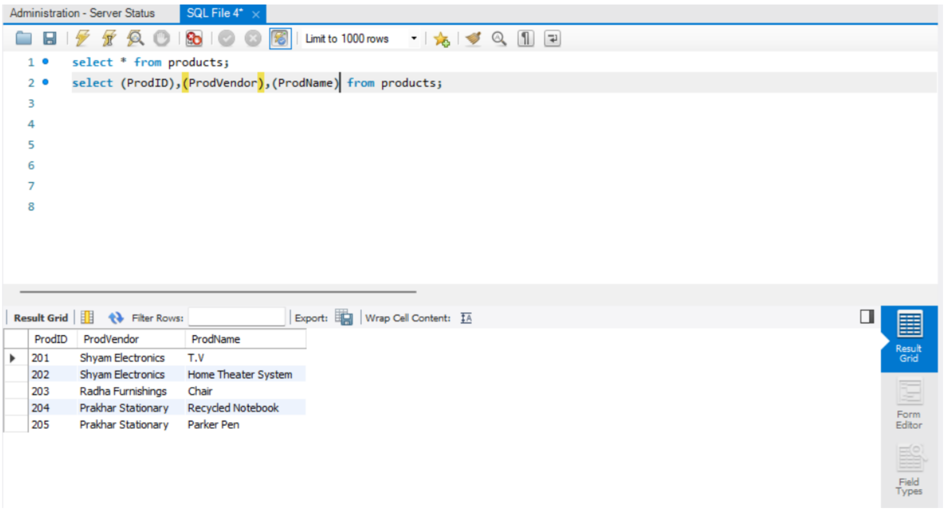
select (EmpNum),(FirstName),(email),(OfficeCode) from employees;



```
select * from employees;
select (EmpNum),(FirstName),(email),(OfficeCode) from employees;
```

EmpNum	FirstName	email	OfficeCode
1	Ramesh	ramsingh@gmail.com	OF1
2	Rakesh	rakpawar@gmail.com	OF1
3	Atul	atukhan@yahoo.in	OF2
4	Adil	adimohd@hotmail.com	OF3
1001	Harshita	harsirohi150@gmail.com	OF1
1002	Kushagra	kusjazz@gamil.com	OF2
1003	Sam	samdsouza@gmail.com	OF3

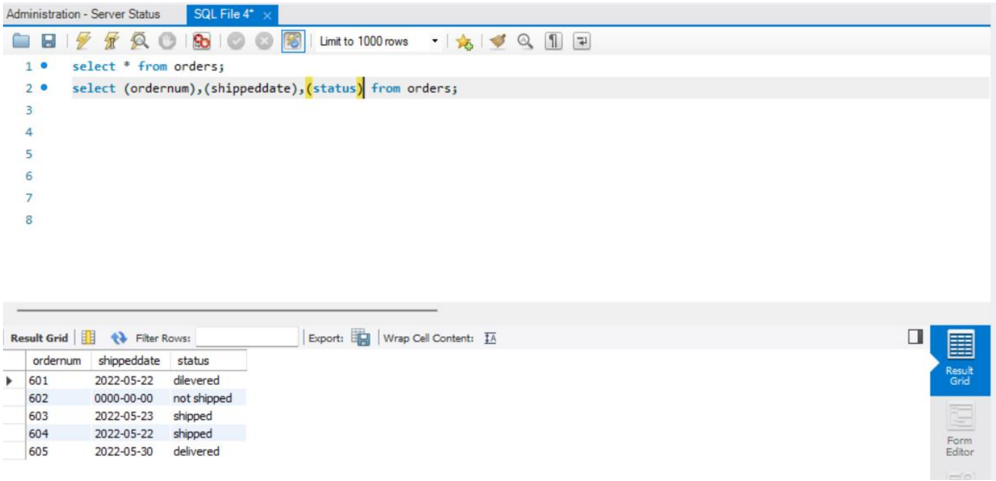
select (ProdID),(ProdVendor),(ProdName) from products;



```
select * from products;
select (ProdID),(ProdVendor),(ProdName) from products;
```

ProdID	ProdVendor	ProdName
201	Shyam Electronics	T.V
202	Shyam Electronics	Home Theater System
203	Radha Furnishings	Chair
204	Prakhar Stationary	Recycled Notebook
205	Prakhar Stationary	Parker Pen

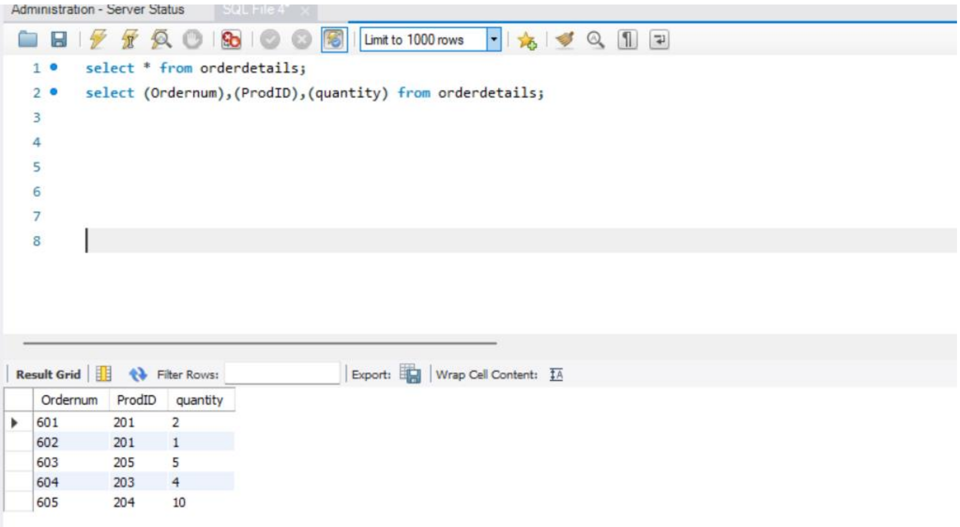
select (ordernum),(shippeddate),(status) from orders;



```
select * from orders;
select (ordernum),(shippeddate),(status) from orders;
```

ordernum	shippeddate	status
601	2022-05-22	dilevered
602	0000-00-00	not shipped
603	2022-05-23	shipped
604	2022-05-22	shipped
605	2022-05-30	delivered

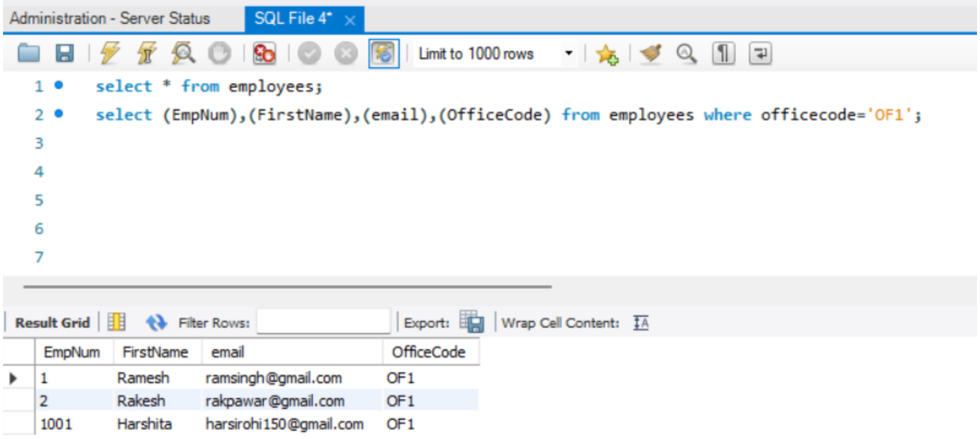
select (Ordernum),(ProdID),(quantity) from orderdetails;



```
select * from orderdetails;
select (Ordernum),(ProdID),(quantity) from orderdetails;
```

Ordernum	ProdID	quantity
601	201	2
602	201	1
603	205	5
604	203	4
605	204	10

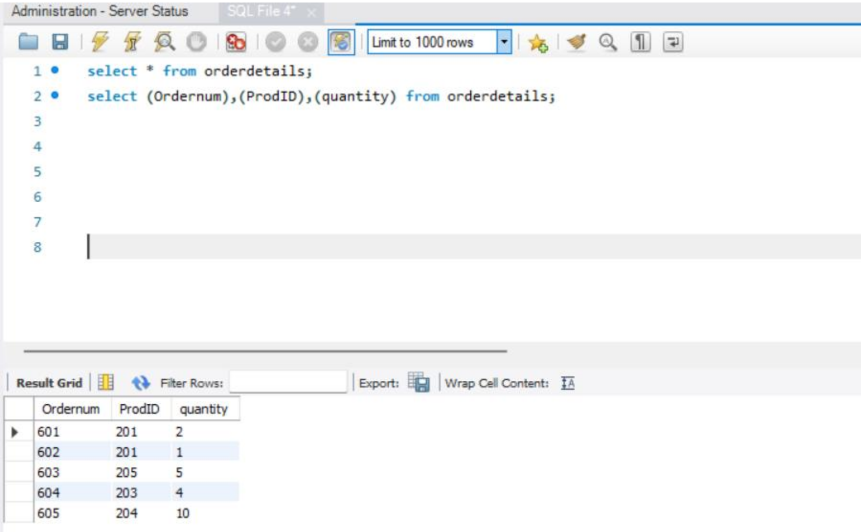
select (EmpNum),(FirstName),(email),(OfficeCode) from employees where officecode='OF1';



```
select * from employees;
select (EmpNum),(FirstName),(email),(OfficeCode) from employees where officecode='OF1';
```

EmpNum	FirstName	email	OfficeCode
1	Ramesh	ramsingh@gmail.com	OF1
2	Rakesh	rakpawar@gmail.com	OF1
1001	Harshita	harsirohi150@gmail.com	OF1

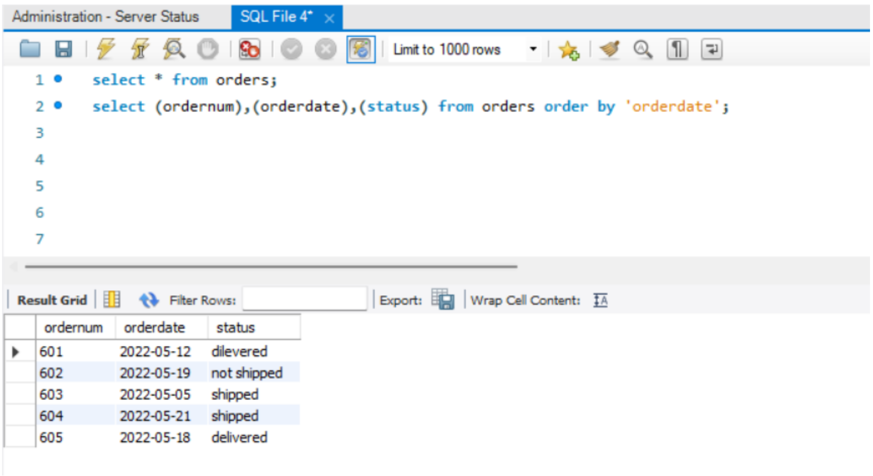
select (ProdID),(ProdVendor),(ProdName),(price) from products where price>='400';



```
select * from orderdetails;
select (Ordernum),(ProdID),(quantity) from orderdetails;
```

Ordernum	ProdID	quantity
601	201	2
602	201	1
603	205	5
604	203	4
605	204	10

select (ordernum),(orderdate),(status) from orders order by 'orderdate';

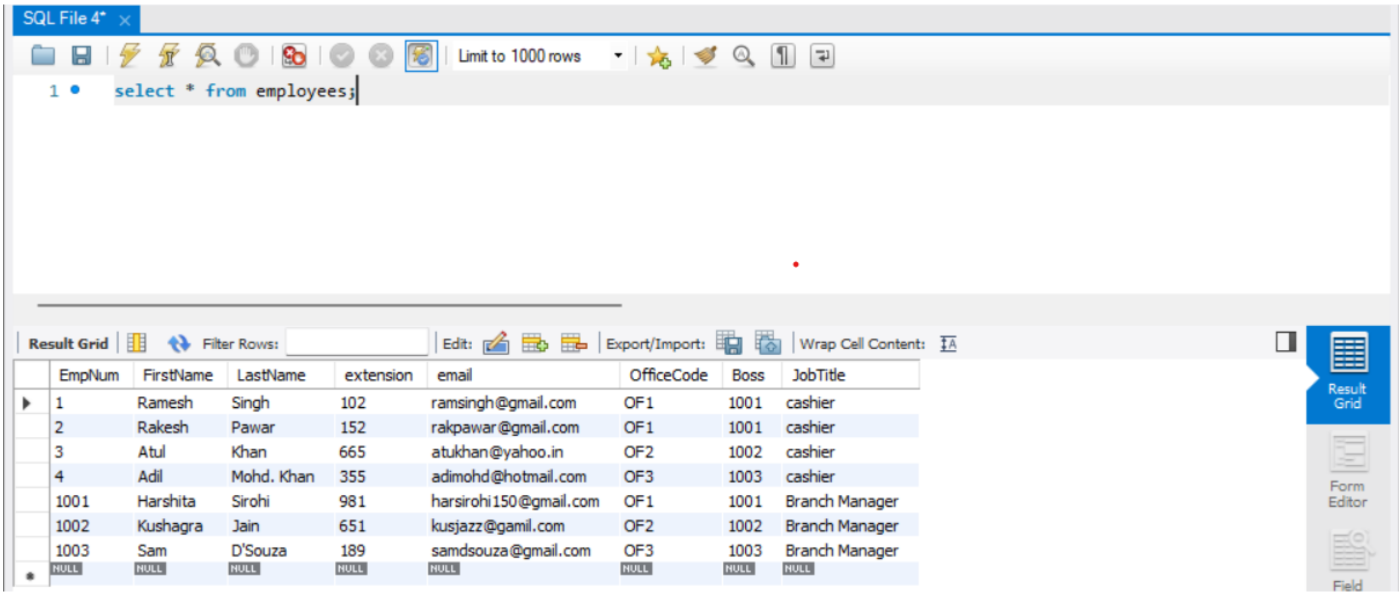


```
select * from orders;
select (ordernum),(orderdate),(status) from orders order by 'orderdate';
```

ordernum	orderdate	status
601	2022-05-12	dilevered
602	2022-05-19	not shipped
603	2022-05-05	shipped
604	2022-05-21	shipped
605	2022-05-18	delivered

2. ALTER AND UPDATE QUERIES

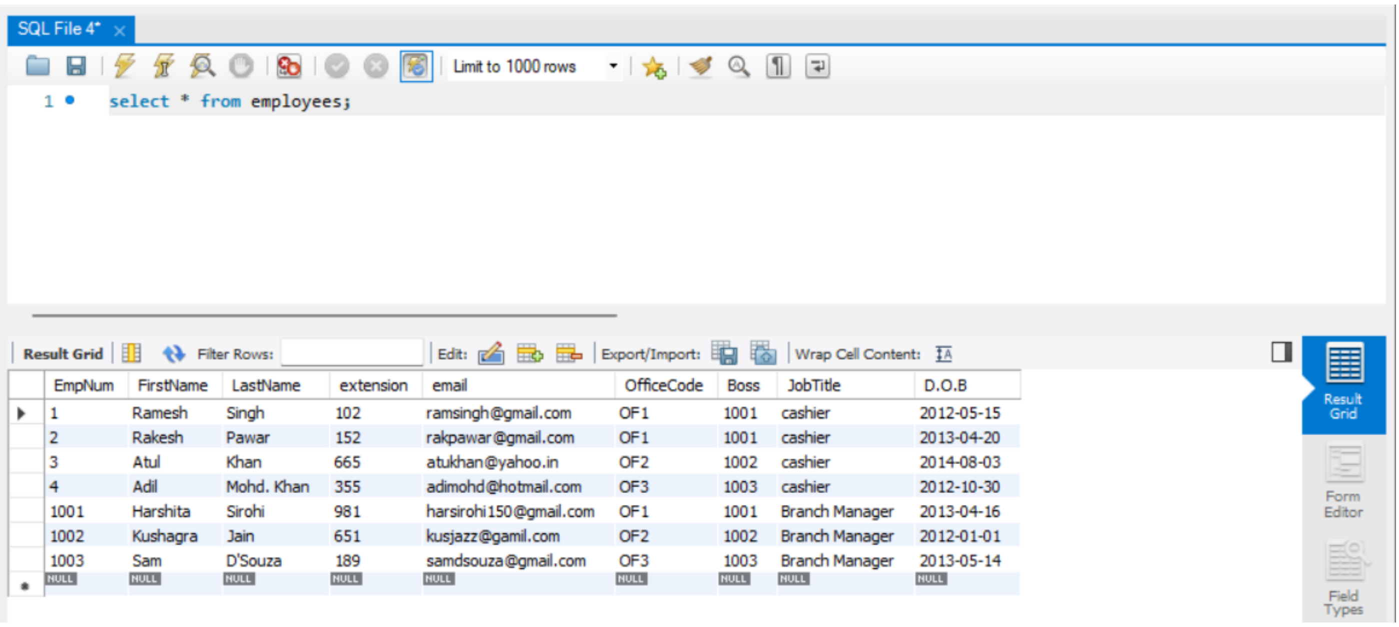
```
    ALTER TABLE `employees` CHANGE `ReportsTo` `Boss` INT(10) NULL DEFAULT NULL;

UPDATE `employees` SET `Boss` = '1001' WHERE `employees`.`OfficeCode` = 'OF1';

UPDATE `employees` SET `Boss` = '1002' WHERE `employees`.`OfficeCode` = 'OF2';

UPDATE `employees` SET `Boss` = '1003' WHERE `employees`.`OfficeCode` = 'OF3';
```



```
select * from employees;
```

EmpNum	FirstName	LastName	extension	email	OfficeCode	Boss	JobTitle
1	Ramesh	Singh	102	ramsingh@gmail.com	OF1	1001	cashier
2	Rakesh	Pawar	152	rakpawar@gmail.com	OF1	1001	cashier
3	Atul	Khan	665	atukhan@yahoo.in	OF2	1002	cashier
4	Adil	Mohd. Khan	355	adimohd@hotmail.com	OF3	1003	cashier
1001	Harshita	Sirohi	981	harsirohi150@gmail.com	OF1	1001	Branch Manager
1002	Kushagra	Jain	651	kusjazz@gamil.com	OF2	1002	Branch Manager
1003	Sam	D'Souza	189	samdsouza@gmail.com	OF3	1003	Branch Manager
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
    ALTER TABLE `employees` ADD `D.O.B` DATE NULL DEFAULT NULL AFTER `JobTitle`;

UPDATE `employees` SET `D.O.B` = '2012-05-15' WHERE `employees`.`EmpNum` = 1;

UPDATE `employees` SET `D.O.B` = '2013-04-20' WHERE `employees`.`EmpNum` = 2;

UPDATE `employees` SET `D.O.B` = '2014-08-03' WHERE `employees`.`EmpNum` = 3;

UPDATE `employees` SET `D.O.B` = '2012-10-30' WHERE `employees`.`EmpNum` = 4;

UPDATE `employees` SET `D.O.B` = '2013-04-16' WHERE `employees`.`EmpNum` = 1001;

UPDATE `employees` SET `D.O.B` = '2012-01-01' WHERE `employees`.`EmpNum` = 1002;

UPDATE `employees` SET `D.O.B` = '2013-05-14' WHERE `employees`.`EmpNum` = 1003;
```

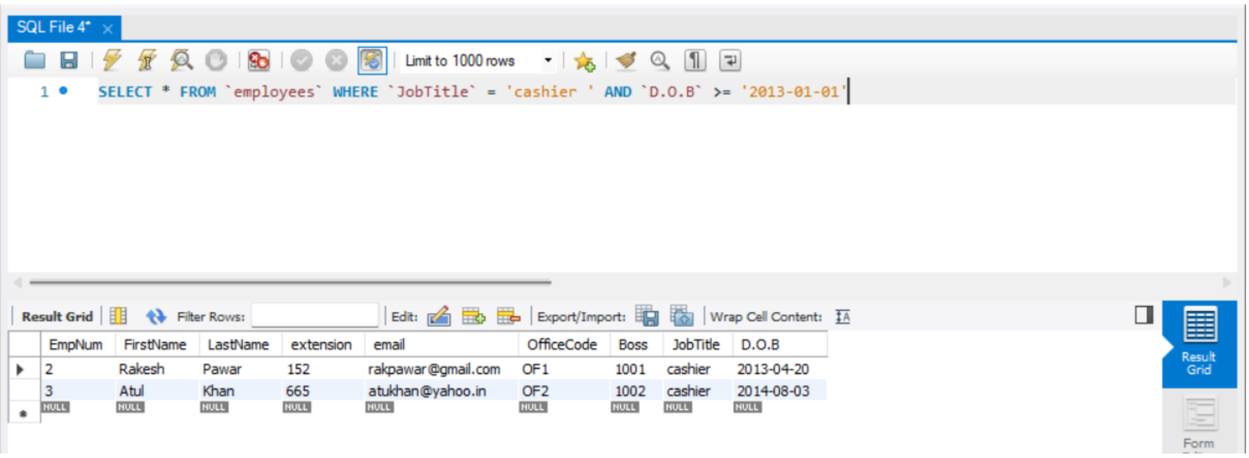


```
select * from employees;
```

EmpNum	FirstName	LastName	extension	email	OfficeCode	Boss	JobTitle	D.O.B
1	Ramesh	Singh	102	ramsingh@gmail.com	OF1	1001	cashier	2012-05-15
2	Rakesh	Pawar	152	rakpawar@gmail.com	OF1	1001	cashier	2013-04-20
3	Atul	Khan	665	atukhan@yahoo.in	OF2	1002	cashier	2014-08-03
4	Adil	Mohd. Khan	355	adimohd@hotmail.com	OF3	1003	cashier	2012-10-30
1001	Harshita	Sirohi	981	harsirohi150@gmail.com	OF1	1001	Branch Manager	2013-04-16
1002	Kushagra	Jain	651	kusjazz@gamil.com	OF2	1002	Branch Manager	2012-01-01
1003	Sam	D'Souza	189	samdsouza@gmail.com	OF3	1003	Branch Manager	2013-05-14
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Select, From, Where, Order By involving AND OR Between operator

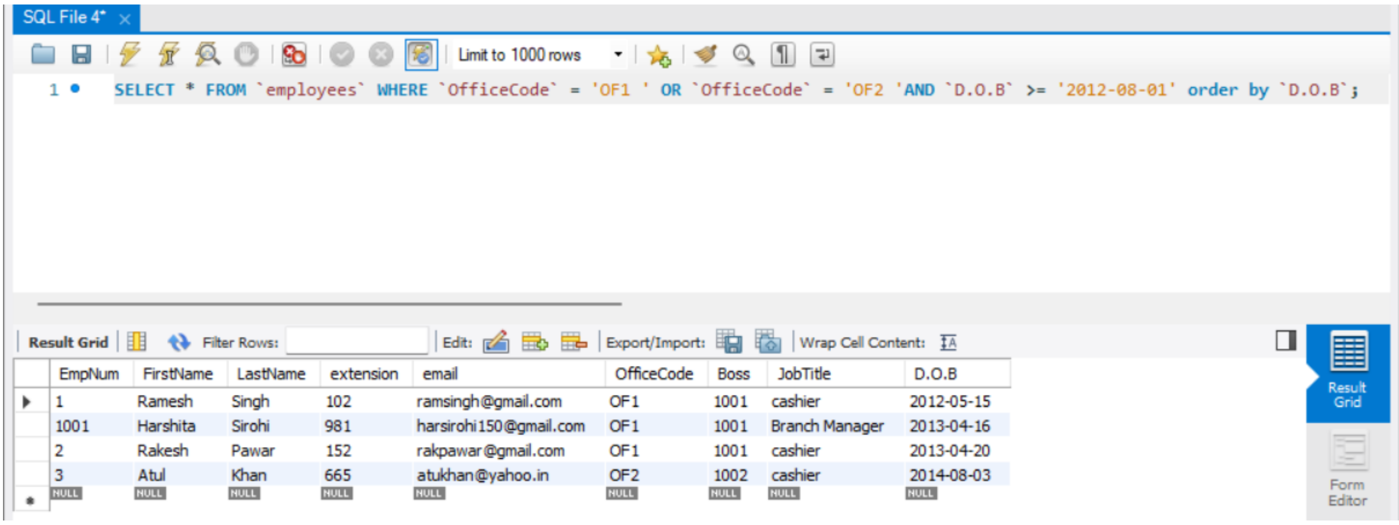
*SELECT * FROM `employees` WHERE `JobTitle` = 'cashier ' AND `D.O.B` >= '2013-01-01'*



```
SELECT * FROM `employees` WHERE `JobTitle` = 'cashier ' AND `D.O.B` >= '2013-01-01'
```

EmpNum	FirstName	LastName	extension	email	OfficeCode	Boss	JobTitle	D.O.B
2	Rakesh	Pawar	152	rakpawar@gmail.com	OF1	1001	cashier	2013-04-20
3	Atul	Khan	665	atukhan@yahoo.in	OF2	1002	cashier	2014-08-03
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

*SELECT * FROM `employees` WHERE `OfficeCode` = 'OF1 ' OR `OfficeCode` = 'OF2 'AND `D.O.B` >= '2012-08-01' order by `D.O.B`;*

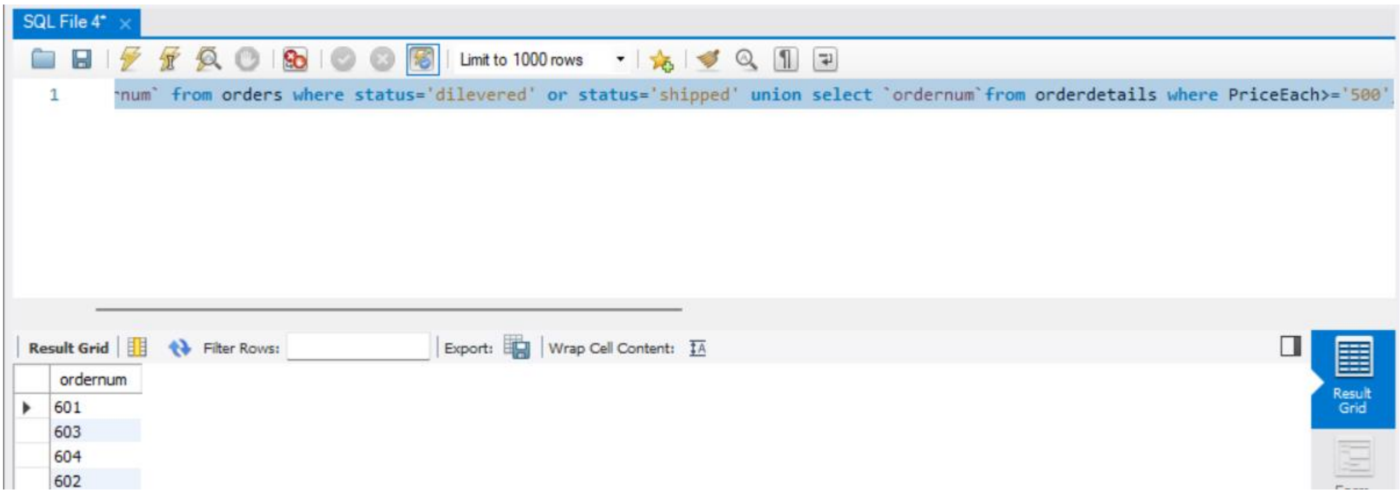


```
SELECT * FROM `employees` WHERE `OfficeCode` = 'OF1 ' OR `OfficeCode` = 'OF2 'AND `D.O.B` >= '2012-08-01' order by `D.O.B`;
```

EmpNum	FirstName	LastName	extension	email	OfficeCode	Boss	JobTitle	D.O.B
1	Ramesh	Singh	102	ramsingh@gmail.com	OF1	1001	cashier	2012-05-15
1001	Harshita	Sirohi	981	harsirohi150@gmail.com	OF1	1001	Branch Manager	2013-04-16
2	Rakesh	Pawar	152	rakpawar@gmail.com	OF1	1001	cashier	2013-04-20
3	Atul	Khan	665	atukhan@yahoo.in	OF2	1002	cashier	2014-08-03
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

3. UNION AND INTERSECTION

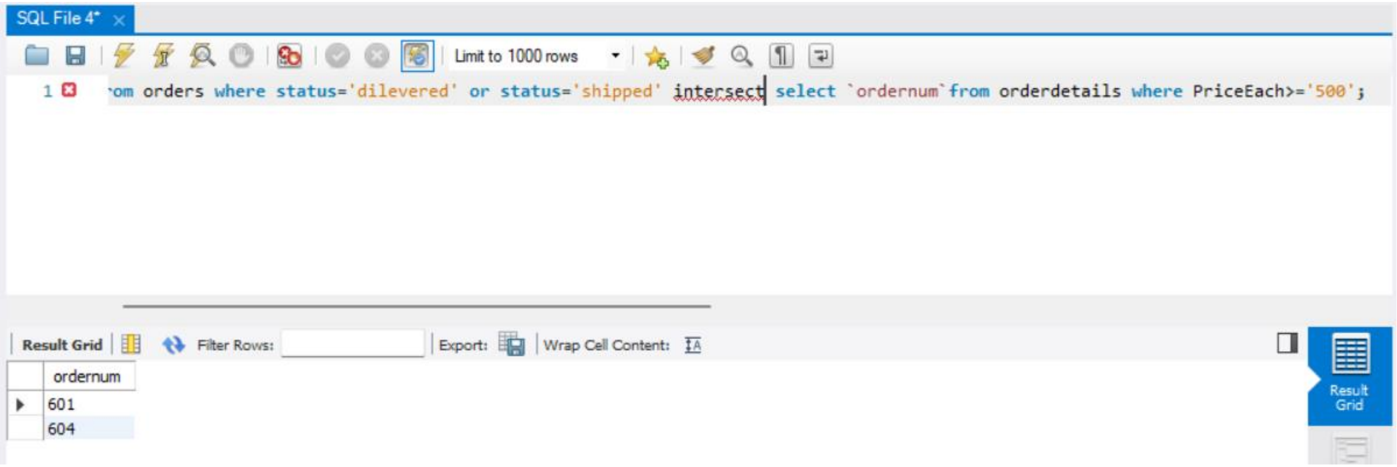
select `ordernum` from orders where status='dilevered' or status='shipped' union select `ordernum`from orderdetails where PriceEach>='500';



```
`num` from orders where status='dilevered' or status='shipped' union select `ordernum`from orderdetails where PriceEach>='500'
```

ordernum
601
603
604
602

select `ordernum` from orders where status='dilevered' or status='shipped' intersect select `ordernum`from orderdetails where PriceEach>='500';

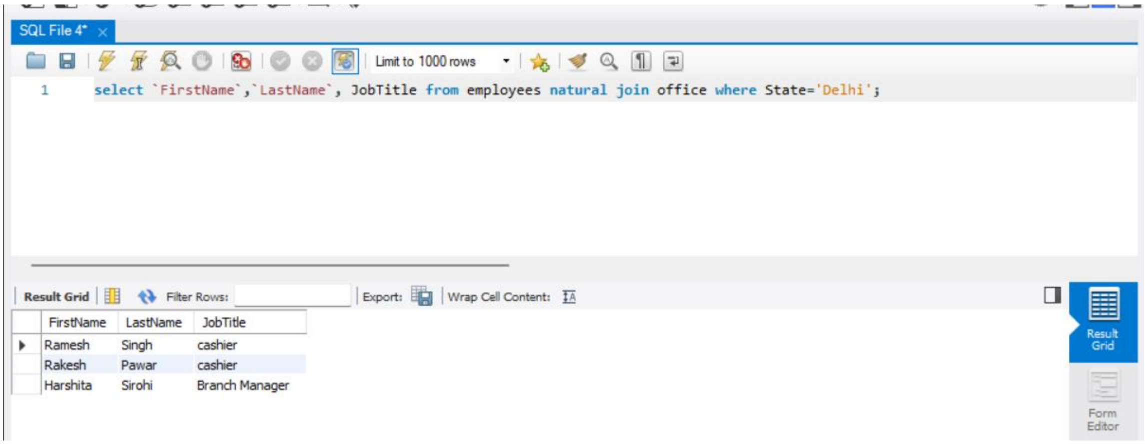


```
om orders where status='dilevered' or status='shipped' intersect select `ordernum`from orderdetails where PriceEach>='500';
```

ordernum
601
604

4 . JOINS

select `FirstName`,`LastName`, JobTitle from employees natural join office where State='Delhi';

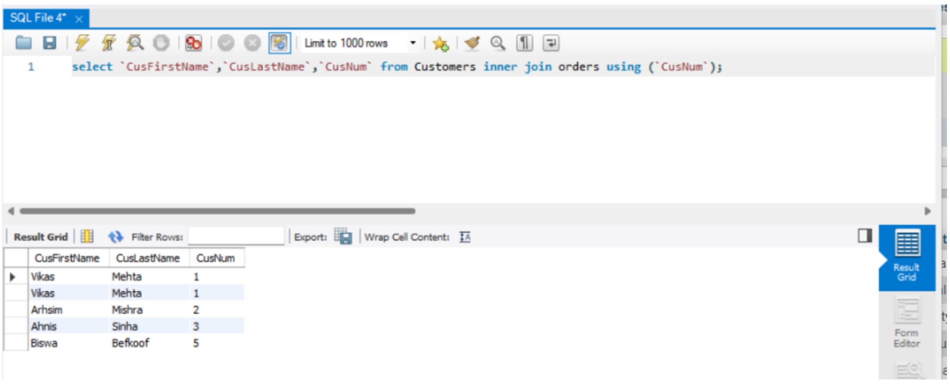


```
select `FirstName`,`LastName`, JobTitle from employees natural join office where State='Delhi';
```

FirstName	LastName	JobTitle
Ramesh	Singh	cashier
Rakesh	Pawar	cashier
Harshita	Sirohi	Branch Manager

<u>Inner join</u>

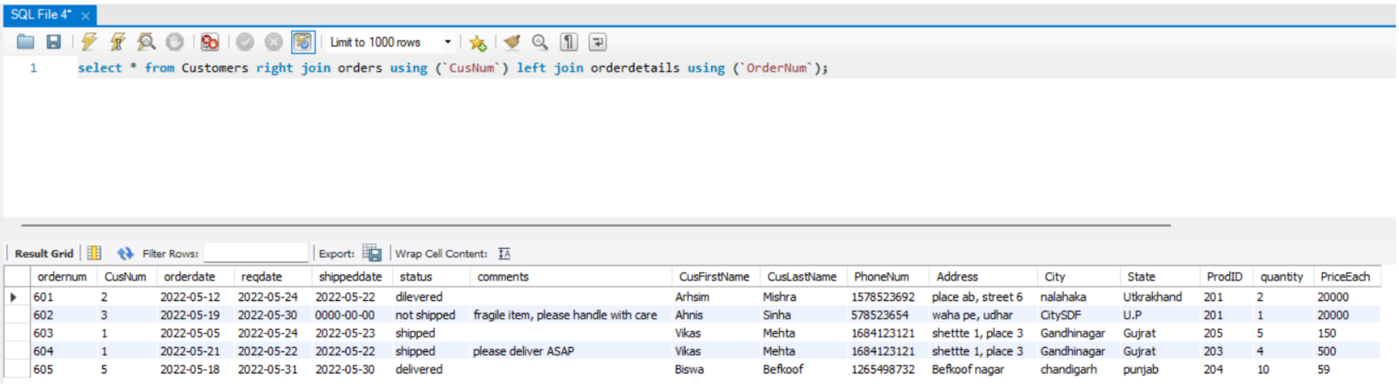
select `CusFirstName`,`CusLastName`,`CusNum` from Customers inner join orders using (`CusNum`);



```
select `CusFirstName`,`CusLastName`,`CusNum` from Customers inner join orders using (`CusNum`);
```

CusFirstName	CusLastName	CusNum
Vikas	Mehta	1
Vikas	Mehta	1
Arhsim	Mishra	2
Ahnis	Sinha	3
Biswa	Befkoof	5

*select * from Customers right join orders using (`CusNum`) left join orderdetails using (`OrderNum`);*

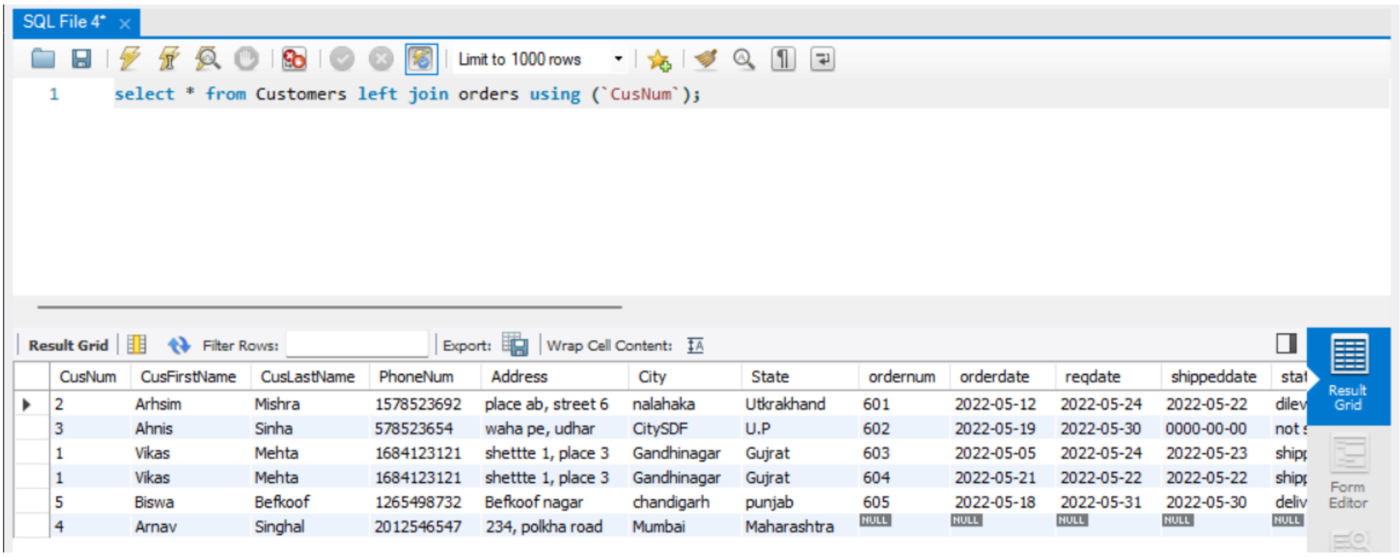


```
select * from Customers right join orders using (`CusNum`) left join orderdetails using (`OrderNum`);
```

ordernum	CusNum	orderdate	reqdate	shippeddate	status	comments	CusFirstName	CusLastName	PhoneNum	Address	City	State	ProdID	quantity	PriceEach
601	2	2022-05-12	2022-05-24	2022-05-22	dilevered		Arhsim	Mishra	1578523692	place ab, street 6	nalahaka	Utkrakhand	201	2	20000
602	3	2022-05-19	2022-05-30	0000-00-00	not shipped	fragile item, please handle with care	Ahnis	Sinha	578523654	waha pe, udhar	CitySDF	U.P	201	1	20000
603	1	2022-05-05	2022-05-24	2022-05-23	shipped		Vikas	Mehta	1684123121	shettte 1, place 3	Gandhinagar	Gujrat	205	5	150
604	1	2022-05-21	2022-05-22	2022-05-22	shipped	please deliver ASAP	Vikas	Mehta	1684123121	shettte 1, place 3	Gandhinagar	Gujrat	203	4	500
605	5	2022-05-18	2022-05-31	2022-05-30	delivered		Biswa	Befkoof	1265498732	Befkoof nagar	chandigarh	punjab	204	10	59

<u>Left outer join</u>

*select * from Customers left join orders using (`CusNum`);*

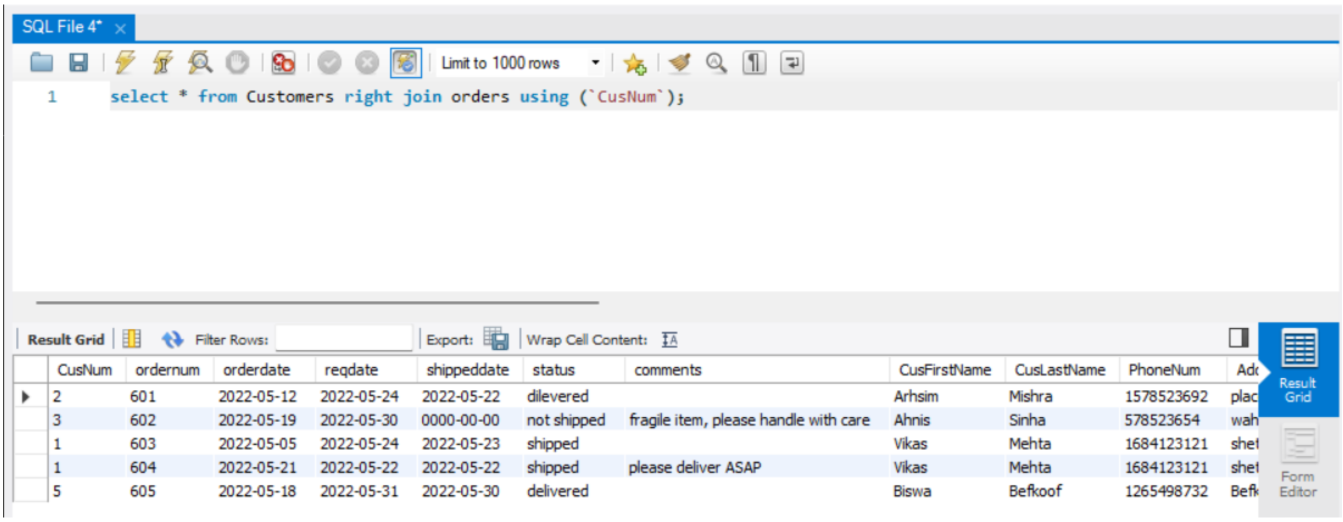


```
select * from Customers left join orders using (`CusNum`);
```

CusNum	CusFirstName	CusLastName	PhoneNum	Address	City	State	ordernum	orderdate	reqdate	shippeddate	stat
2	Arhsim	Mishra	1578523692	place ab, street 6	nalahaka	Utkrakhand	601	2022-05-12	2022-05-24	2022-05-22	dilev
3	Ahnis	Sinha	578523654	waha pe, udhar	CitySDF	U.P	602	2022-05-19	2022-05-30	0000-00-00	not s
1	Vikas	Mehta	1684123121	shettte 1, place 3	Gandhinagar	Gujrat	603	2022-05-05	2022-05-24	2022-05-23	shipp
1	Vikas	Mehta	1684123121	shettte 1, place 3	Gandhinagar	Gujrat	604	2022-05-21	2022-05-22	2022-05-22	shipp
5	Biswa	Befkoof	1265498732	Befkoof nagar	chandigarh	punjab	605	2022-05-18	2022-05-31	2022-05-30	deliv
4	Arnav	Singhal	2012546547	234, polkha road	Mumbai	Maharashtra	NULL	NULL	NULL	NULL	NULL

Right Outer Join

*select * from Customers right join orders using (`CusNum`);*



```
select * from Customers right join orders using (`CusNum`);
```

CusNum	ordernum	orderdate	reqdate	shippeddate	status	comments	CusFirstName	CusLastName	PhoneNum	Adc
2	601	2022-05-12	2022-05-24	2022-05-22	dilevered		Arhsim	Mishra	1578523692	plac
3	602	2022-05-19	2022-05-30	0000-00-00	not shipped	fragile item, please handle with care	Ahnis	Sinha	578523654	wah
1	603	2022-05-05	2022-05-24	2022-05-23	shipped		Vikas	Mehta	1684123121	shet
1	604	2022-05-21	2022-05-22	2022-05-22	shipped	please deliver ASAP	Vikas	Mehta	1684123121	shet
5	605	2022-05-18	2022-05-31	2022-05-30	delivered		Biswa	Befkoof	1265498732	Befk

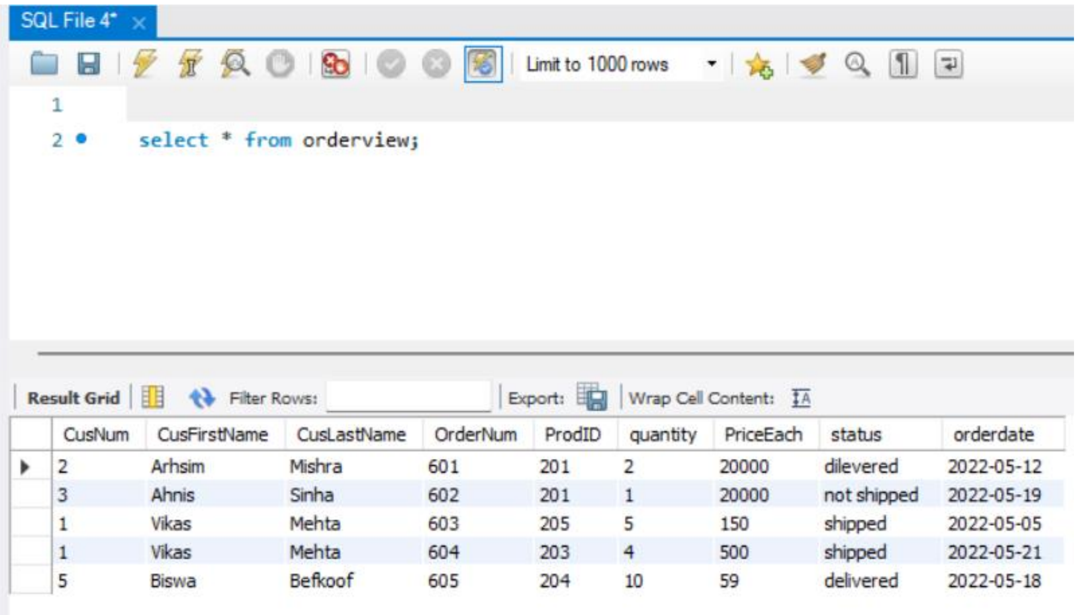
VIEW CREATION IN DBMS

Creating View

CREATE OR REPLACE VIEW `orderview` AS select `CusNum`, `CusFirstName` , `CusLastName` ,`OrderNum`, `ProdID`, `quantity`, `PriceEach`,`status`,`orderdate`, from Customers right join orders using (`CusNum`) left join orderdetails using (`OrderNum`);

Displaying the View

*select * from orderview;*

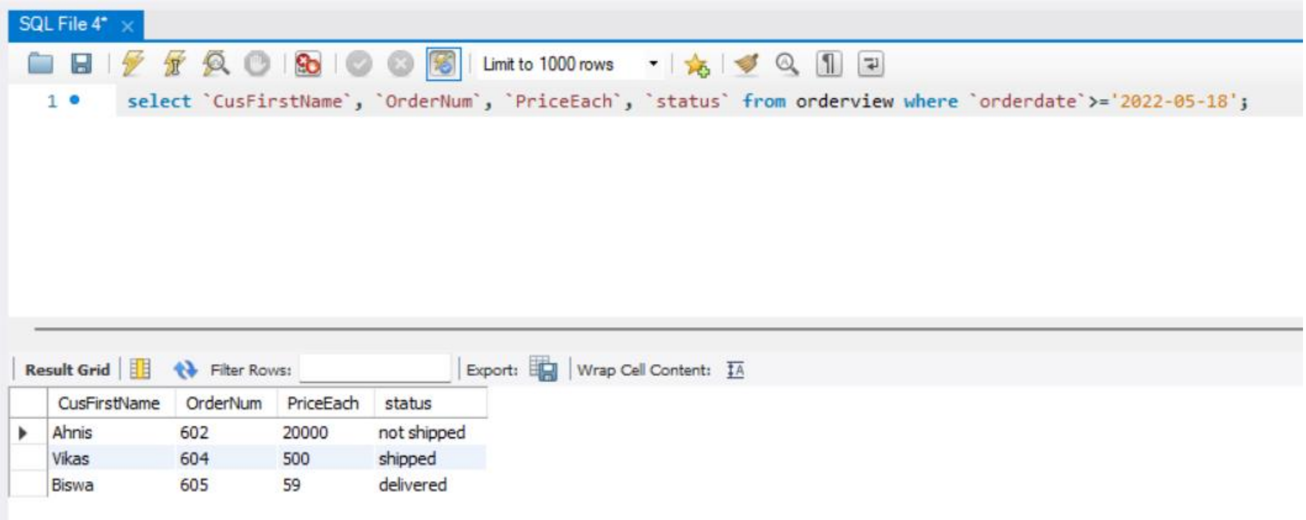


```
select * from orderview;
```

CusNum	CusFirstName	CusLastName	OrderNum	ProdID	quantity	PriceEach	status	orderdate
2	Arhsim	Mishra	601	201	2	20000	dilevered	2022-05-12
3	Ahnis	Sinha	602	201	1	20000	not shipped	2022-05-19
1	Vikas	Mehta	603	205	5	150	shipped	2022-05-05
1	Vikas	Mehta	604	203	4	500	shipped	2022-05-21
5	Biswa	Befkoof	605	204	10	59	delivered	2022-05-18

Running queries on the View created

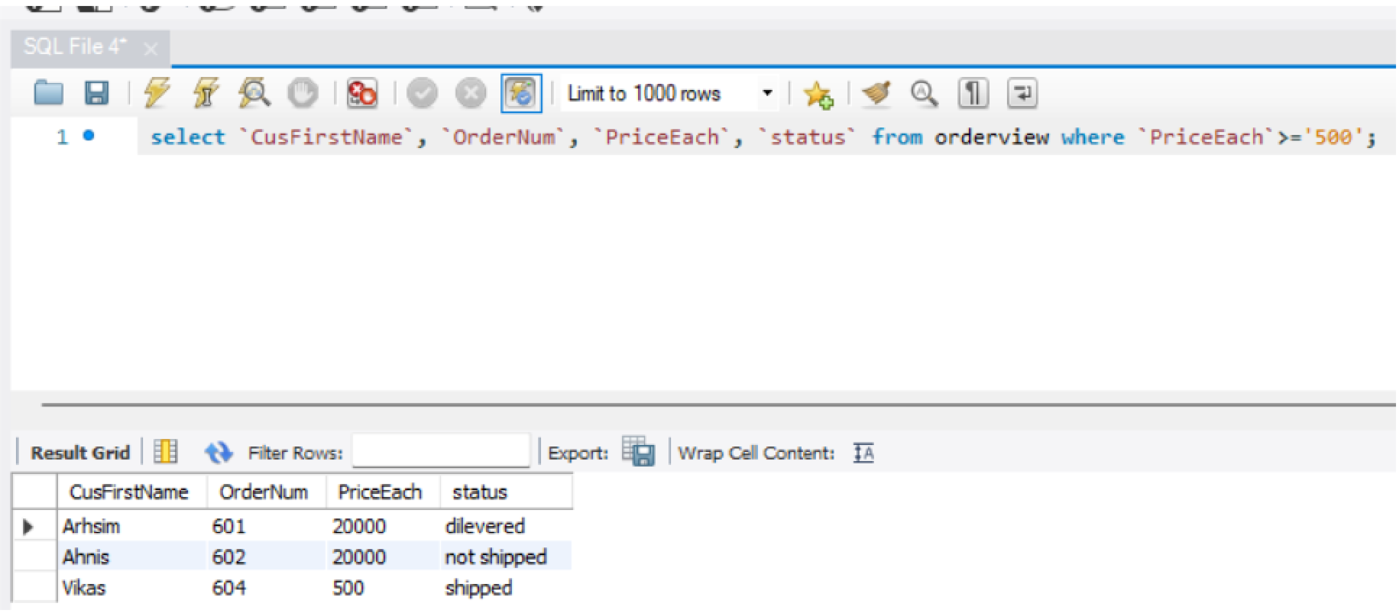
select `CusFirstName`, `OrderNum`, `PriceEach`, `status` from orderview where `orderdate`>='2022-05-18';



```
select `CusFirstName`, `OrderNum`, `PriceEach`, `status` from orderview where `orderdate`>='2022-05-18';
```

CusFirstName	OrderNum	PriceEach	status
Ahnis	602	20000	not shipped
Vikas	604	500	shipped
Biswa	605	59	delivered

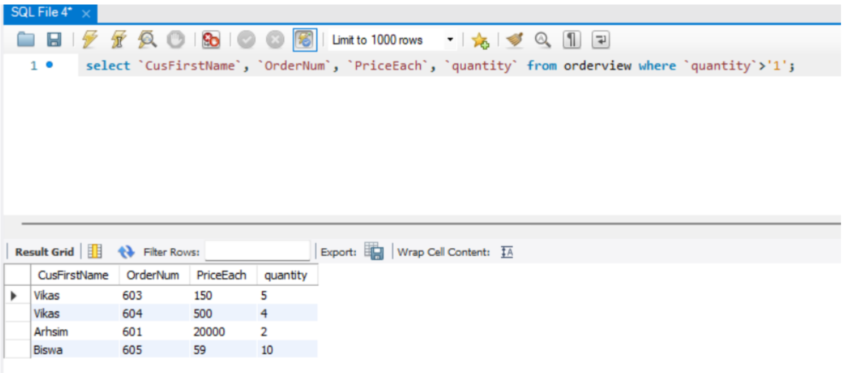
select `CusFirstName`, `OrderNum`, `PriceEach`, `status` from orderview where `PriceEach`>='500';



```
select `CusFirstName`, `OrderNum`, `PriceEach`, `status` from orderview where `PriceEach`>='500';
```

CusFirstName	OrderNum	PriceEach	status
Arhsim	601	20000	dilevered
Ahnis	602	20000	not shipped
Vikas	604	500	shipped

select `CusFirstName`, `OrderNum`, `PriceEach`, `quantity` from orderview where `quantity`>'1';



```
select `CusFirstName`, `OrderNum`, `PriceEach`, `quantity` from orderview where `quantity`>'1';
```

CusFirstName	OrderNum	PriceEach	quantity
Vikas	603	150	5
Vikas	604	500	4
Arhsim	601	20000	2
Biswa	605	59	10

CONCLUSION AND FUTURE

We have achieved basic understanding of RDBMS systems and database.

This project can further be used to develop a small-scale trading/selling platform.

Proper integration of front-end GUI and Web Development can be done.