**TEAM-8**

**ART GALLERY MANAGEMENT SYSTEM**

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**Problem Statement**:

To create an efficient database management system for an Art Gallery.

**Introduction:**

This project primarily deals with managing details of paintings, employees, customers and other stakeholders. We can maintain a record of the paintings present in the gallery, details of customers who buy these paintings. We can also enter new paintings available for sale. We can also record the details of the employees who work there.

**A few assumptions of our dbms model:**

* The mini world is a single gallery
* An exhibition can hold only one auction but the same painting can be put up on several auctions if it’s unsold. And in each auction only one painting is sold
* NULL value in the price\_fetched column of auction refers to unsold.

**Justification for the usage of PostgreSQL as the DBMS software:**

* Open Source DBMS
* Diverse indexing techniques
* Flexible Full-text search
* Diverse kinds of replication
* Diversified extension functions
* Supports ACID(Atomicity, Consistency, Isolation, Durability) and Transaction

**Mapping from ER model to Relational model:**

**Step 1:** Convert all Strong Entity Sets in to Relations(Tables)

Strong Entity Sets - Artist, Customer, Department, Employee, Exhibition, Painting

Write down the tables for them mentioning all their attributes excluding the multivalued attributes. Only the constituent attributes of the composite attributes are written in the tables.

**Step2:** Mapping of Weak Entity Types

Weak Entity Types – Auction, Instalments

While creating tables for the Weak entity types, we will add the primary key of the Strong entity to which it is associated as the foreign key.

**Step3:** Mapping 1:1 Relationship Types

HAS, HEADS

We are using the Foreign Key Approach Method for this; the primary key of one entity is added as the foreign key to the other entity with total participation.

**Step4:** Mapping 1:N / N:1 Relationship Types

PAYS, BUYS, PAINTS, MANAGES, BELONGS\_TO

Add primary key of entity set with cardinality “1” as foreign key to the entity set with cardinality “N”.

**Step5:** Mapping M:N Relationship Types

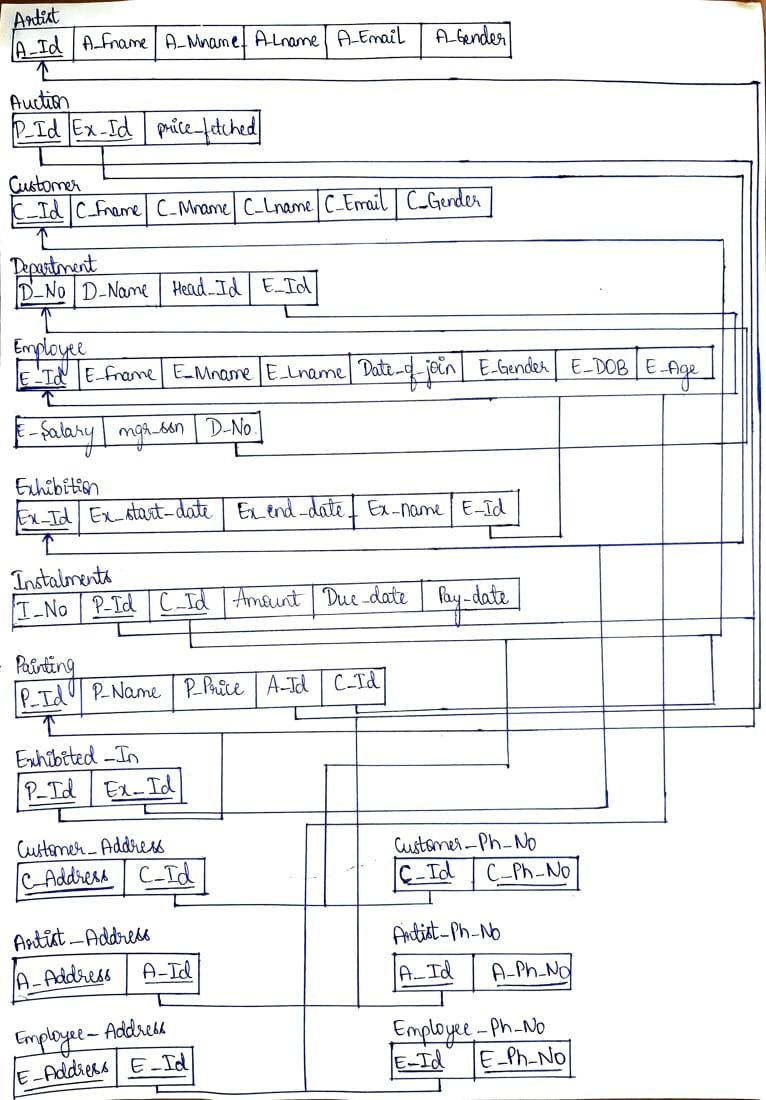
EXHIBITED\_IN

Create a new relation/table including primary keys of both the entity sets. Add the descriptive attribute also, if any.

**Step6:** Mapping Multivalued Attributes

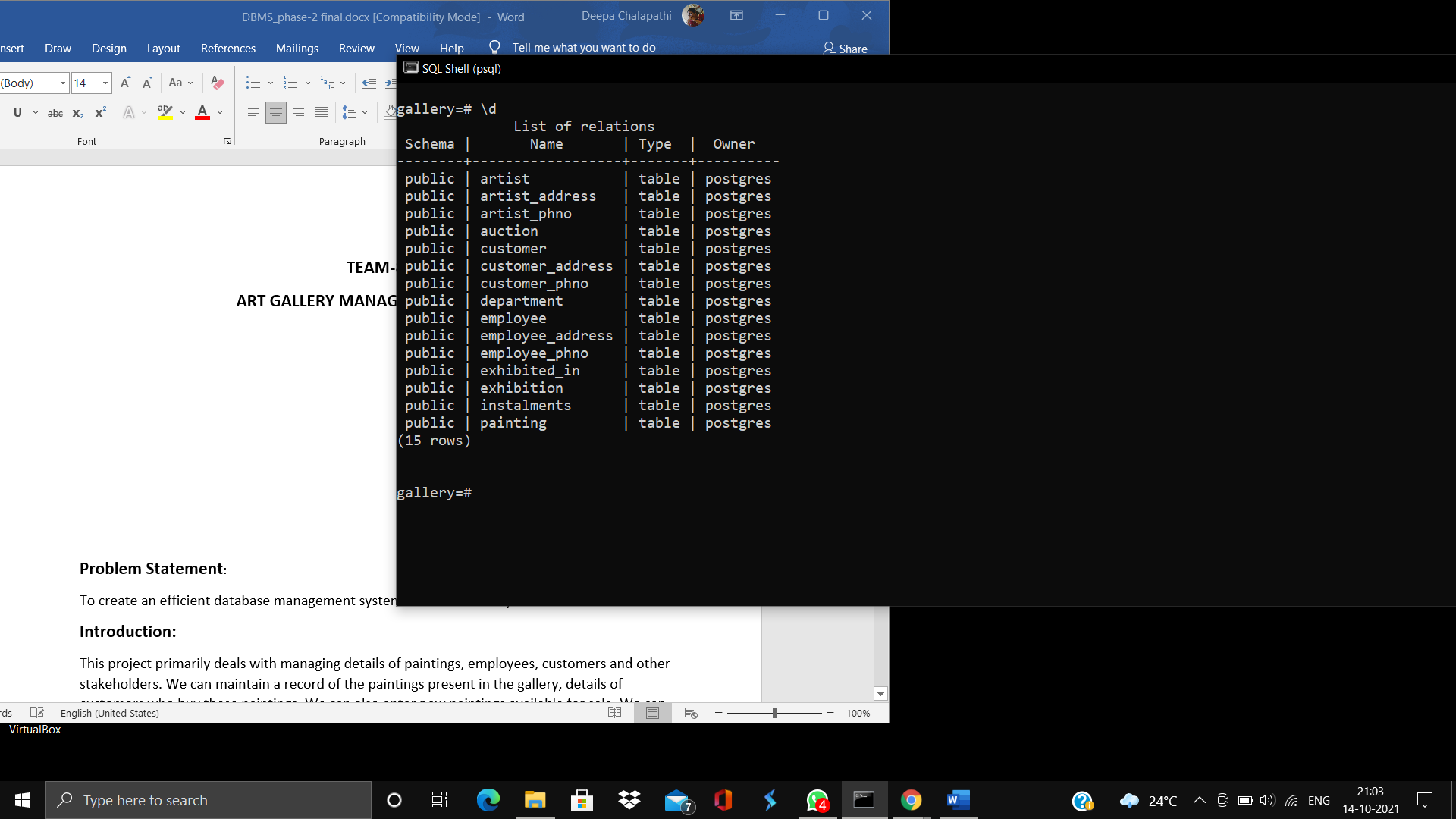
For each Multivalued attribute, create a new separate relation. Add primary key of the entity set in new relation as a foreign key. The foreign key attribute and multivalued attribute both together are called the “composite key” for this relation.

**Relational Model:**

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**Creation and Insertion of relations in PostgreSQL:**

**List of relations:**

****

**Create statements:**

**Artist:**

create table artist(

a\_id varchar(30) not null unique primary key,

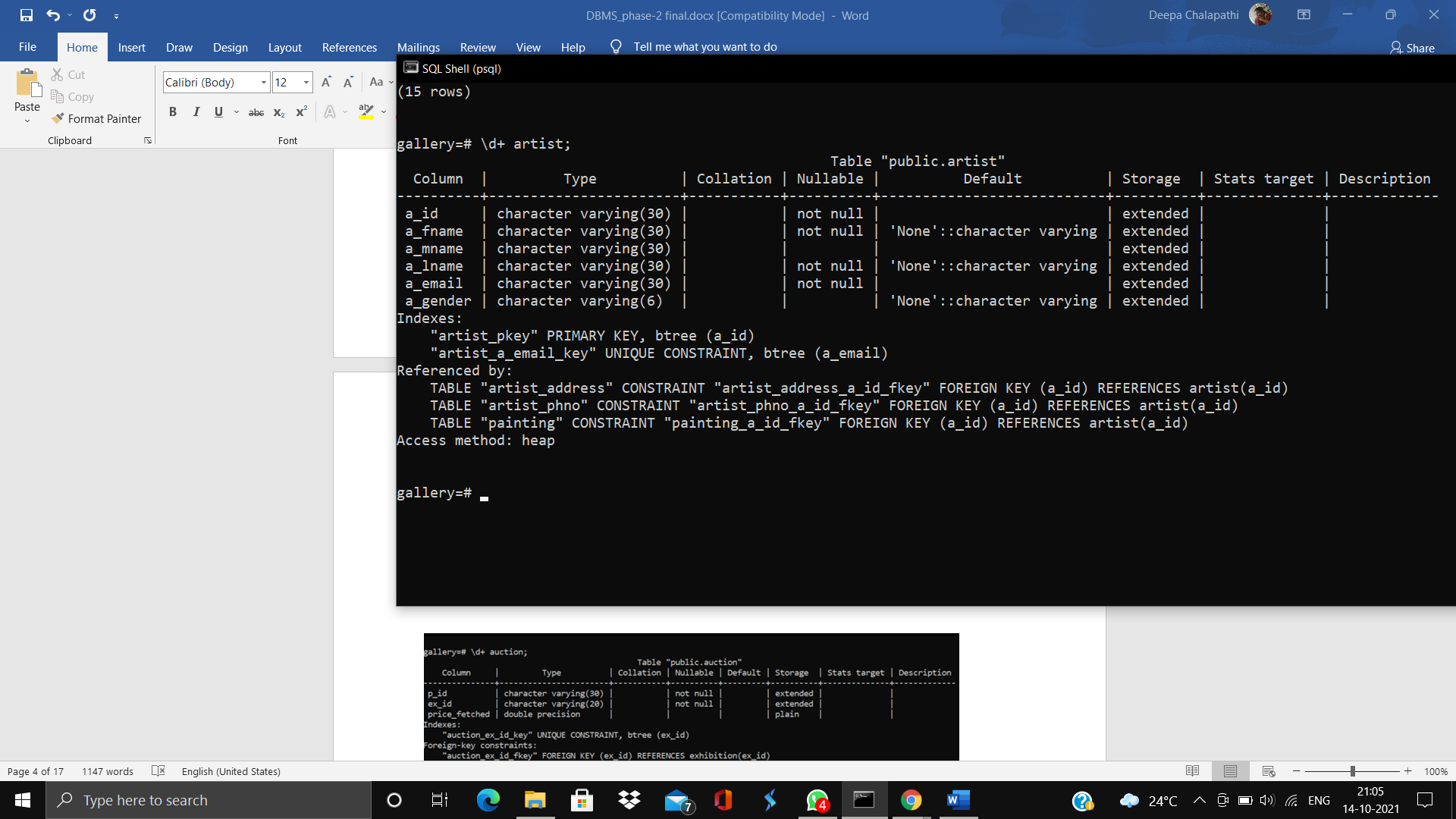
a\_fname varchar(30) not null default ‘None’,

a\_mname varchar(30),

a\_lname varchar(30) not null default ‘None’,

a\_email varchar(30) not null unique,

a\_gender varchar(6) default ‘None’);



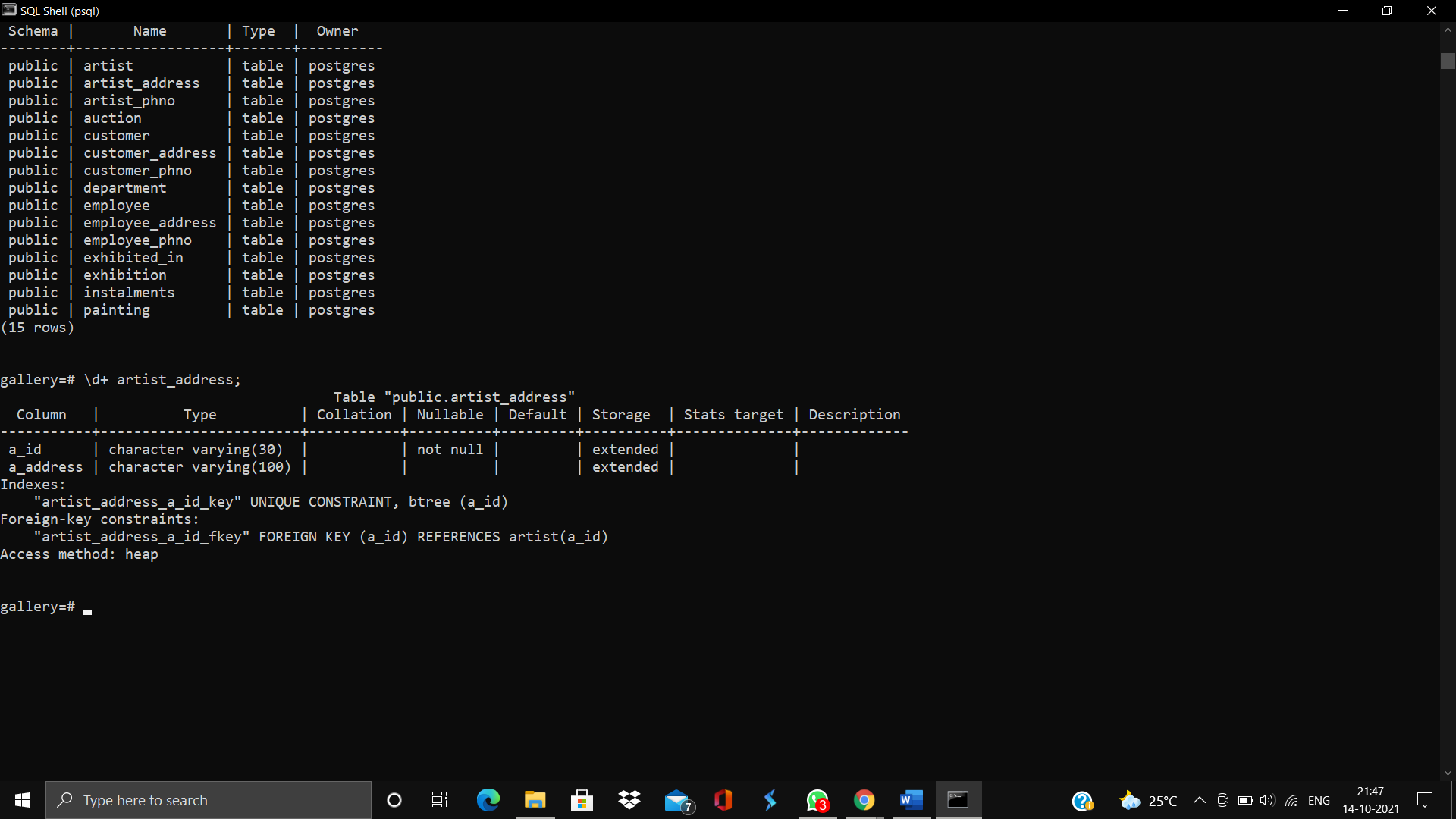
**Artist\_address:**

create table artist\_address(

a\_id varchar(30) not null unique,

a\_address varchar(100),

foreign key (a\_id) references artist(a\_id));

****

**Artist\_phno:**

create table artist\_phno(

a\_id varchar(30) not null unique,

a\_ph\_no numeric,

foreign key (a\_id) references artist(a\_id));

****

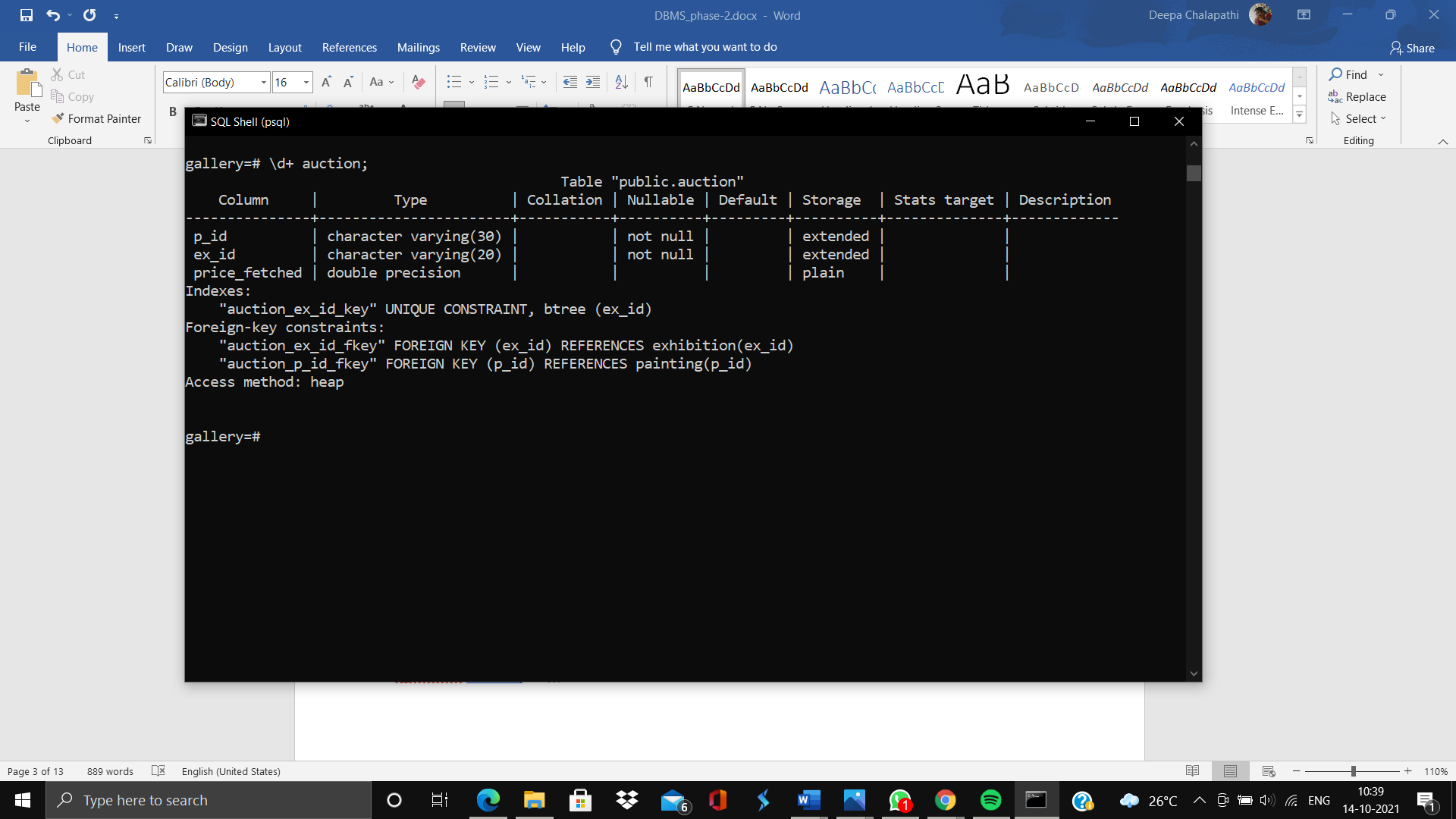
**Auction:**

create table Auction(

p\_id varchar(30) not null;

ex\_id varchar(20) not null unique,

price\_fetched float);



**Customer:**

create table customer(

c\_id varchar(30) not null unique primary key,

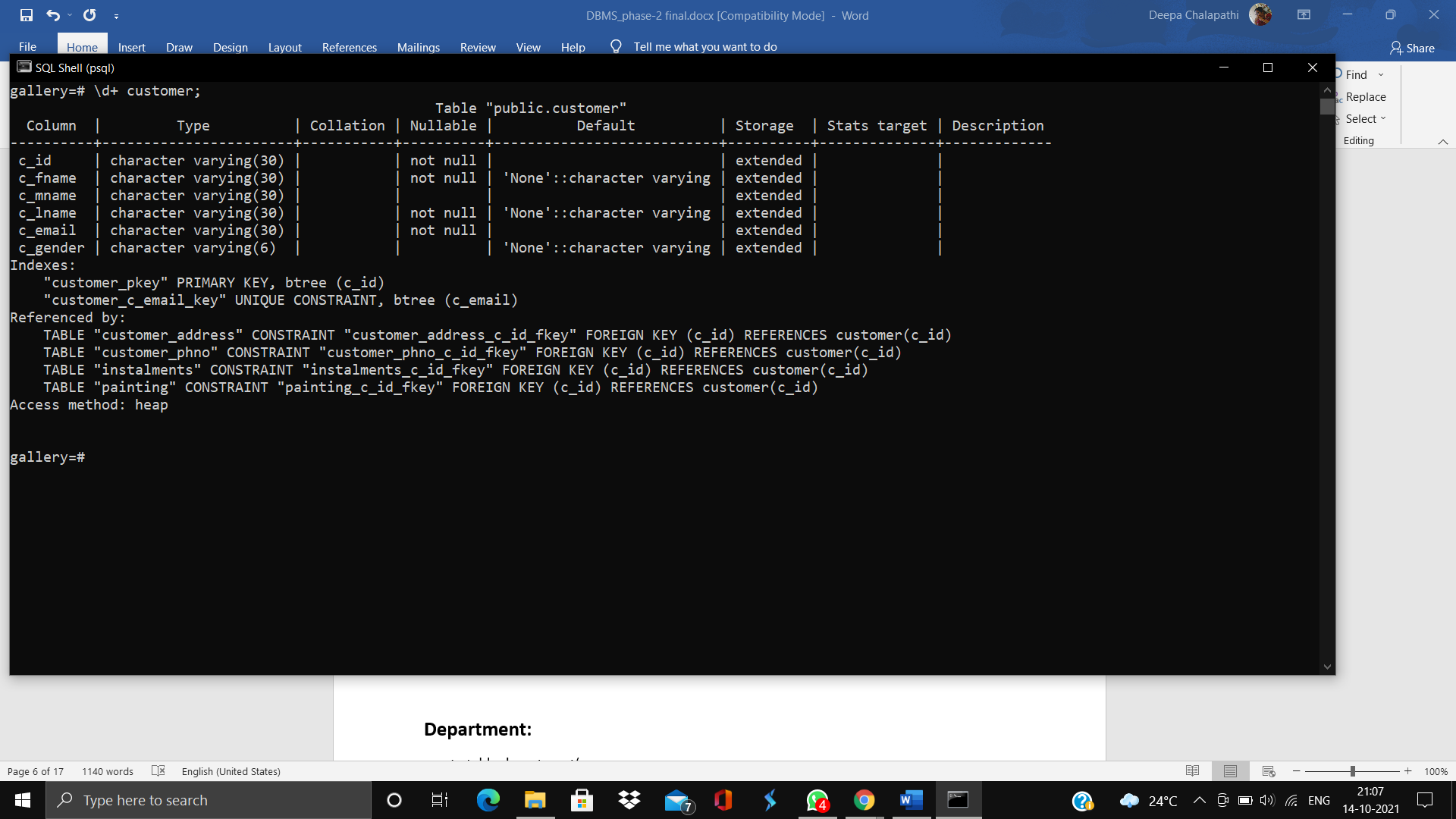
c\_fname varchar(30) not null default ‘None’,

c\_mname varchar(30),

c\_lname varchar(30) not null default ‘None’,

c\_email varchar(30) not null unique,

c\_gender varchar(6) default ‘None’);



**Customer\_address and Customer\_phno:**

create table customer\_address(

c\_id varchar(30) not null unique,

c\_address varchar(100),

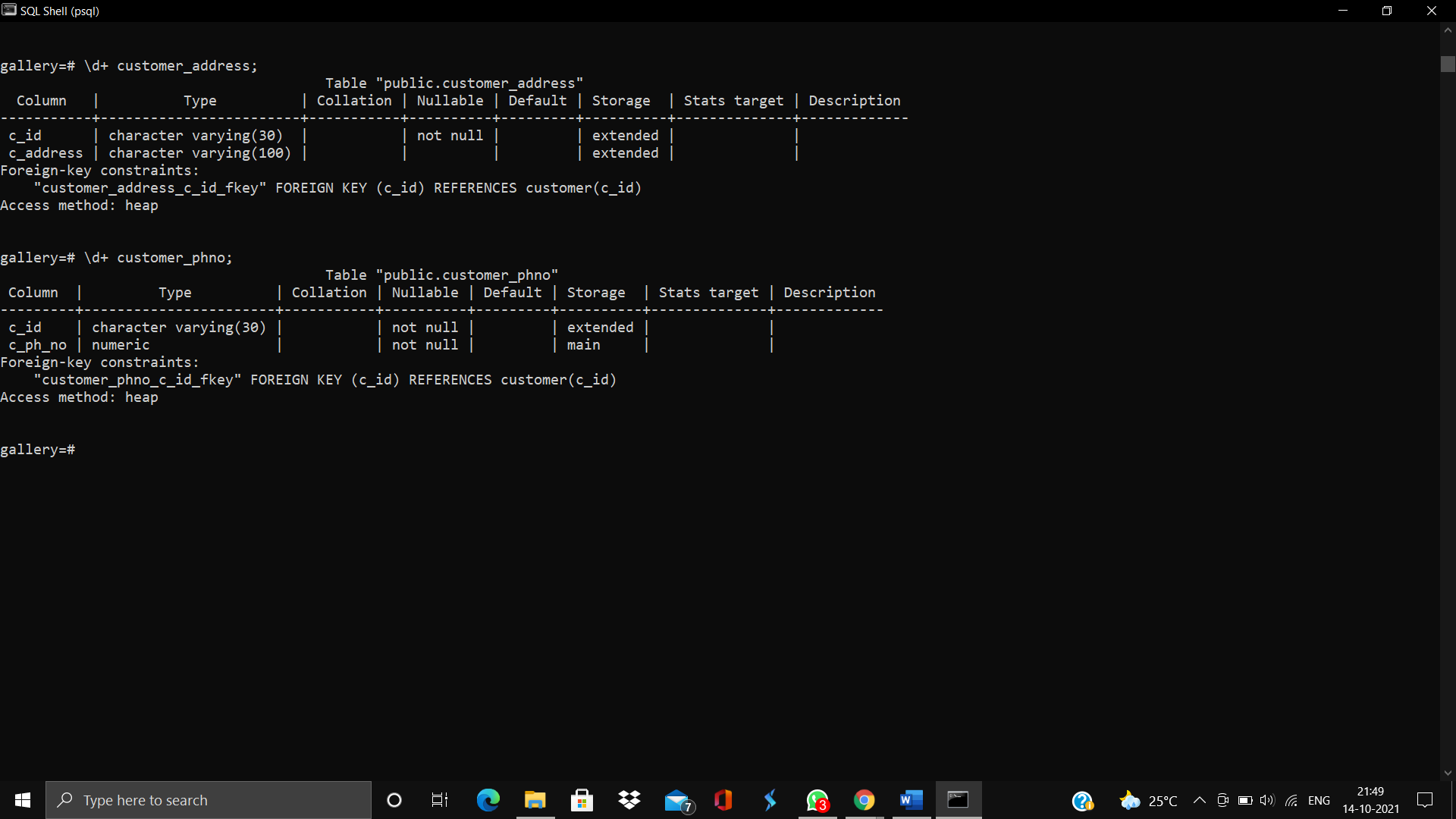
foreign key (c\_id) references customer(c\_id));

create table customer\_phno(

c\_id varchar(30) not null unique,

c\_ph\_no numeric,

foreign key (c\_id) references customer(c\_id));

****

**Department:**

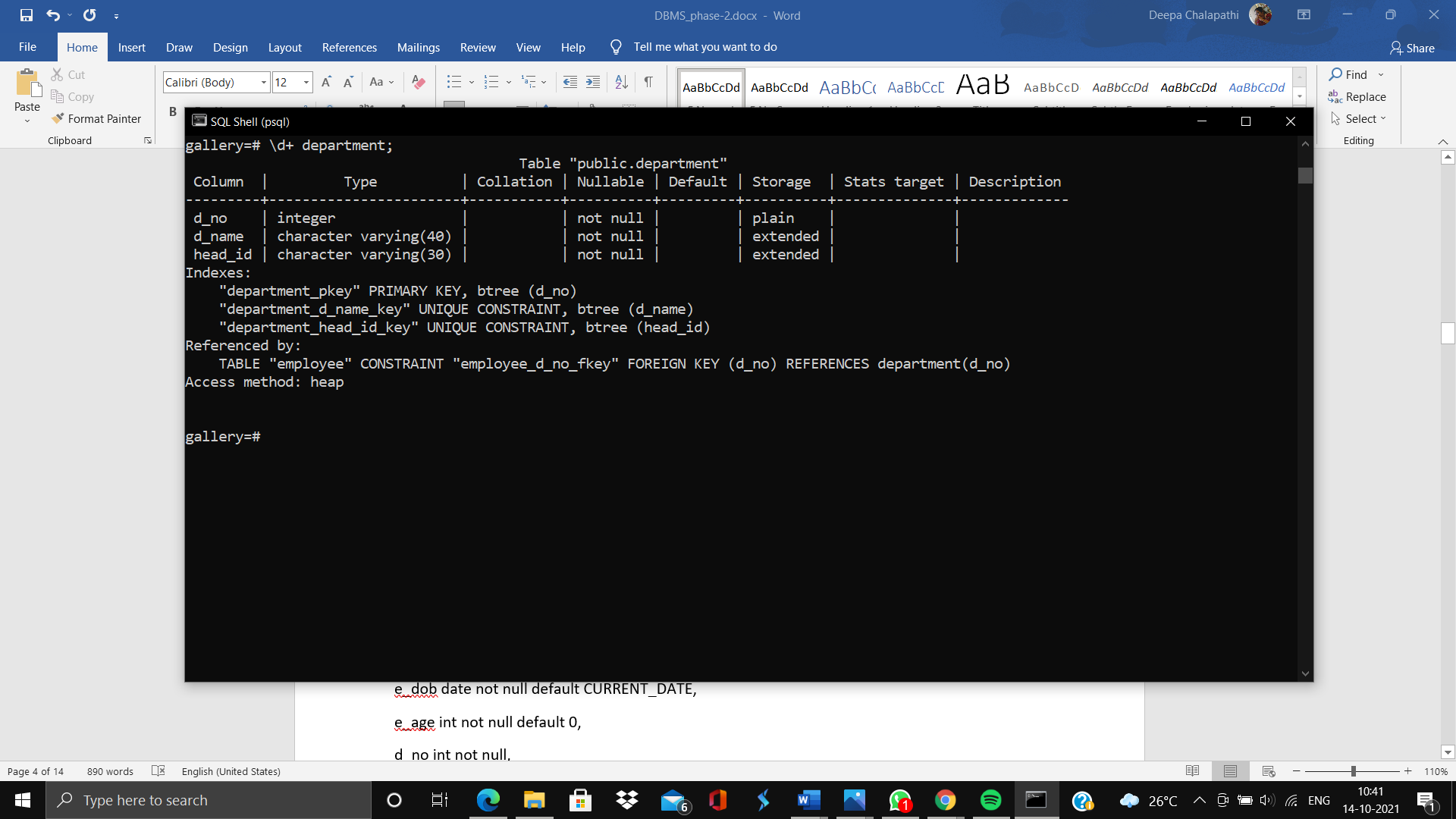
create table department(

d\_no int unique not null primary key,

d\_name varchar(40) not null unique,

head\_id varchar(30) not null unique,

foreign key (head\_id) references employee mgr\_ssn));



**Employee:**

create table employee(

e\_id varchar(30) not null unique primary key,

e\_fname varchar(30) not null default ‘None’,

e\_mname varchar(30),

e\_lname varchar(30) not null default ‘None’,

date\_of\_join date not null default CURRENT\_DATE,

e\_gender varchar(6) default ‘None’,

e\_dob date not null default CURRENT\_DATE,

e\_age int not null default 0,

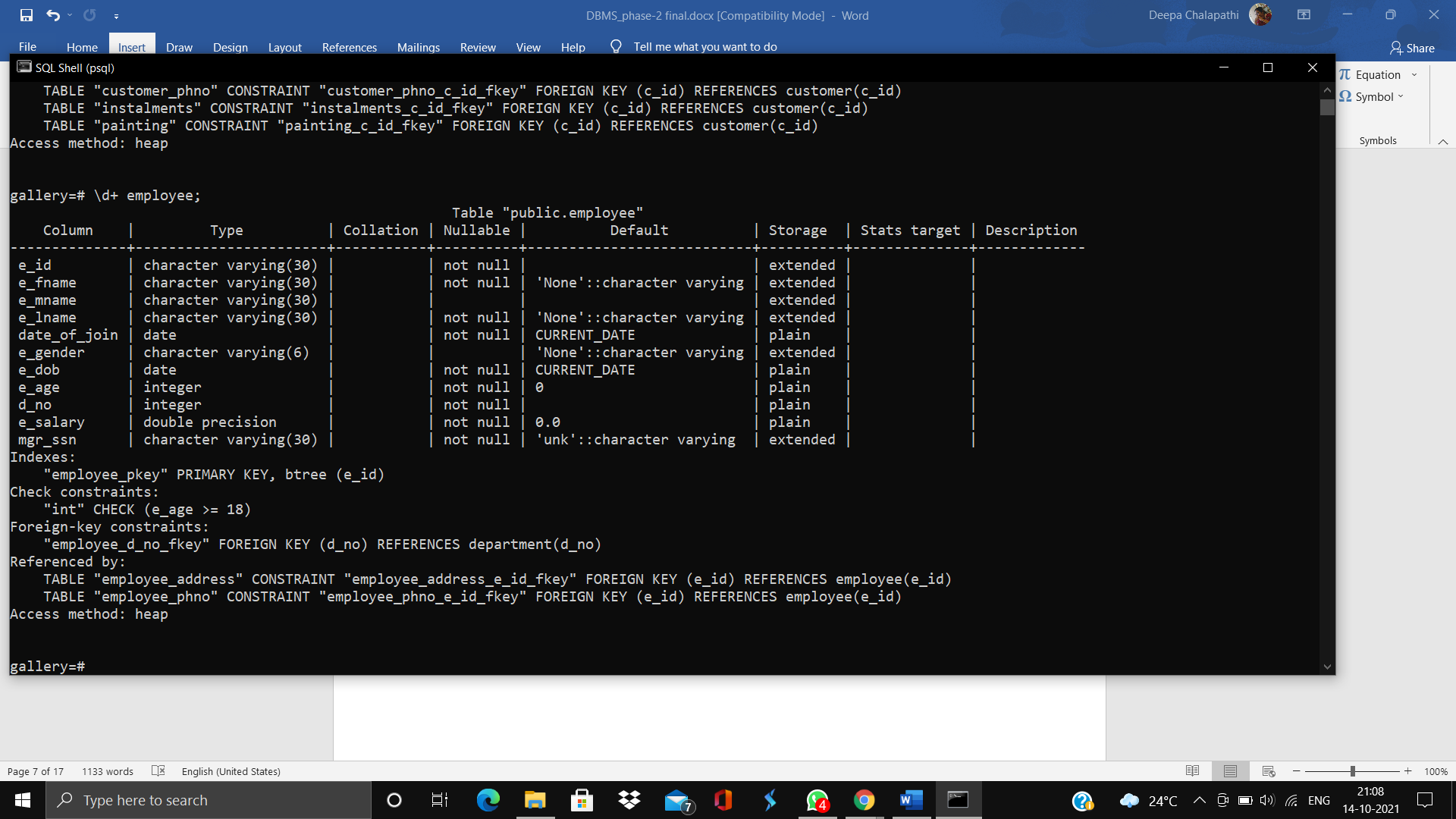
d\_no int not null,

e\_salary float not null default 0.0,

mgr\_ssn varchar(30) not null,

foreign key(d\_no) references department (d\_no));

alter table employee add constraint check(age>=18);



**Employee\_address and Emplyee\_phno:**

create table employee\_address(

e\_id varchar(30) not null unique,

e\_address varchar(100),

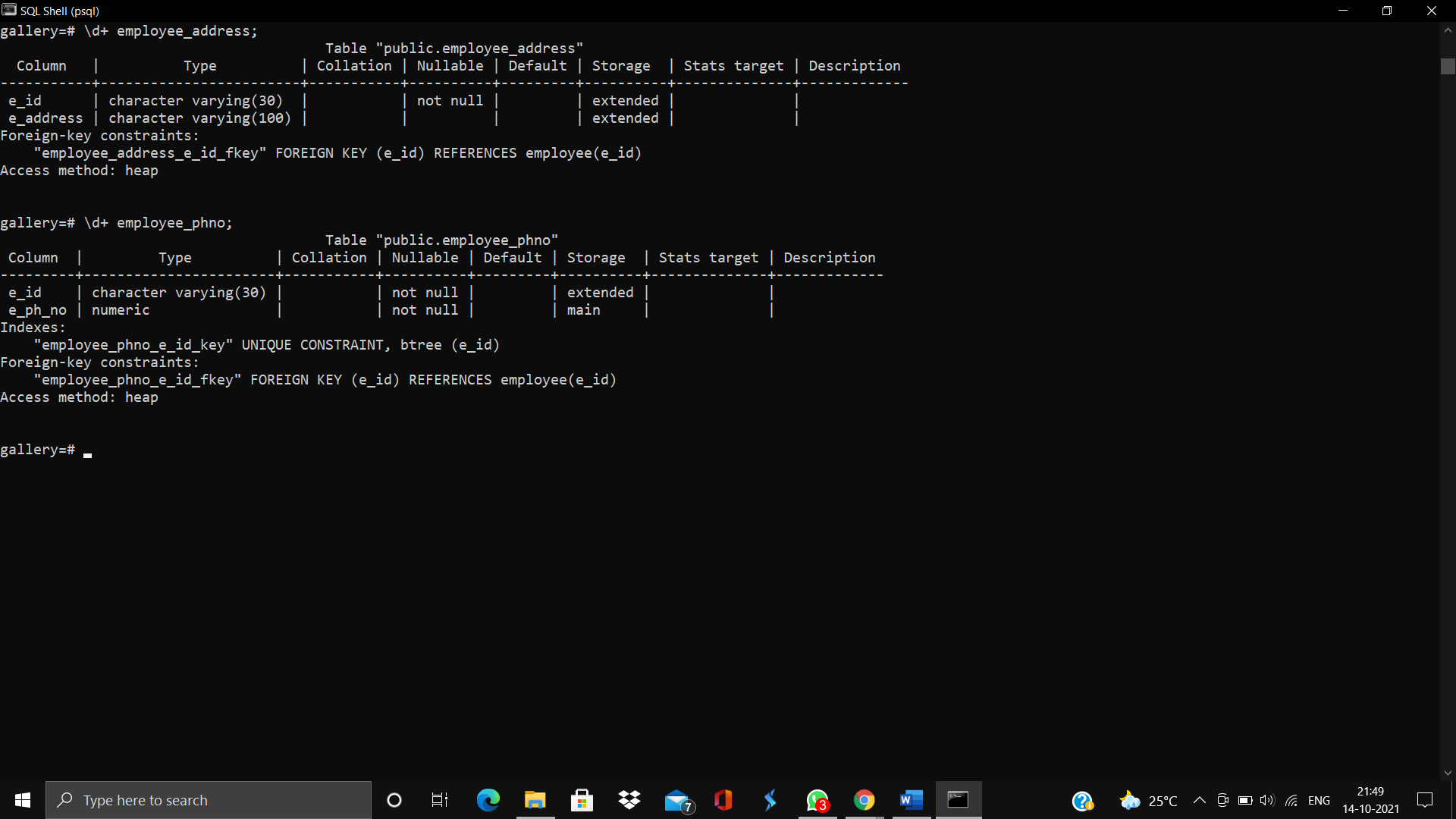
foreign key (e\_id) references employee(e\_id));

create table employee\_phno(

e\_id varchar(30) not null unique,

e\_ph\_no numeric,

foreign key (e\_id) references employee(e\_id));

****

**Exhibited\_in:**

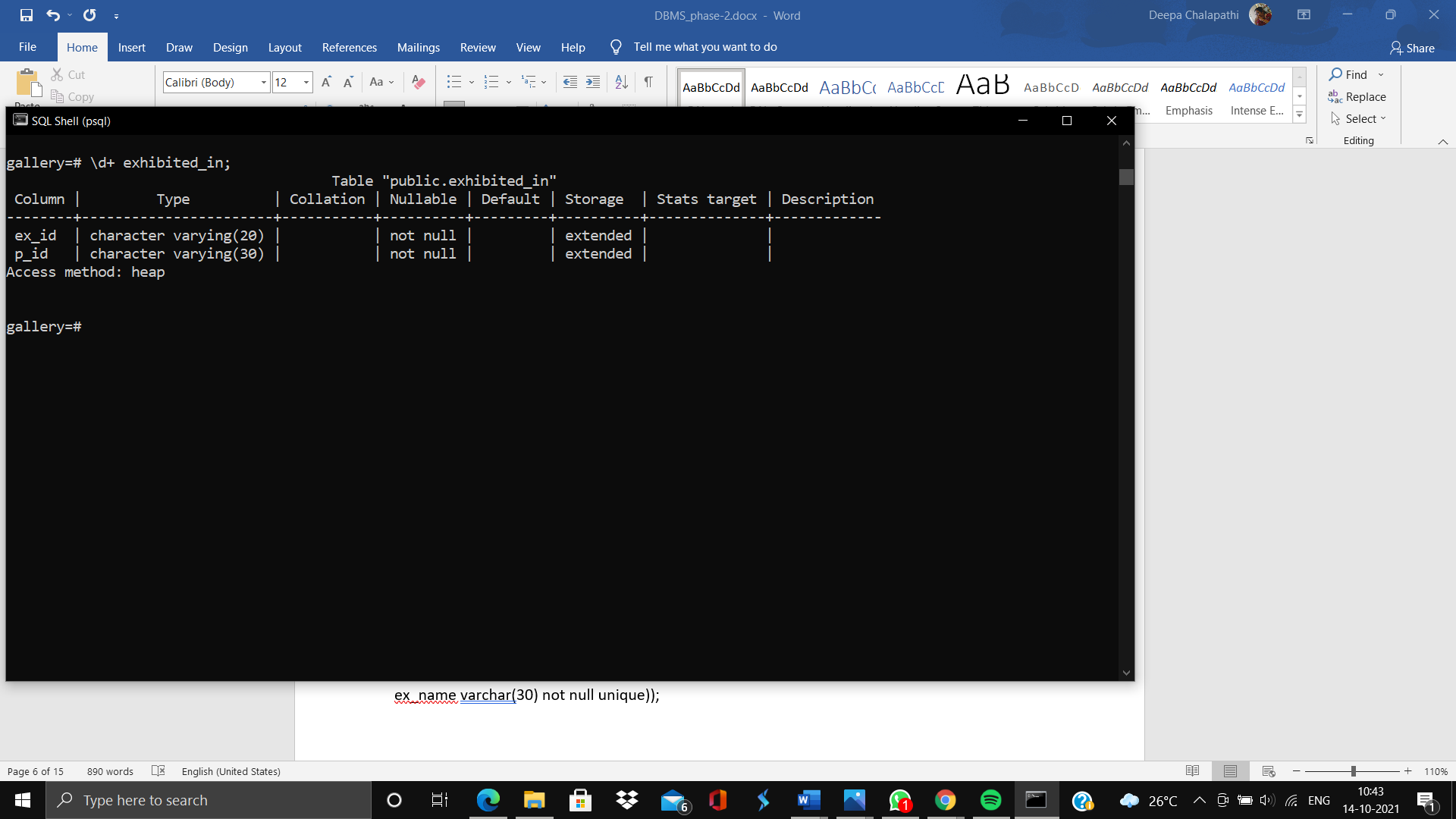
create table exhibited\_in(

ex\_id not null,

p\_id not null,

foreign key (ex\_id) references exhibition (ex\_id),

foreign key (p\_id) references painting(p\_id));



**Exhibition:**

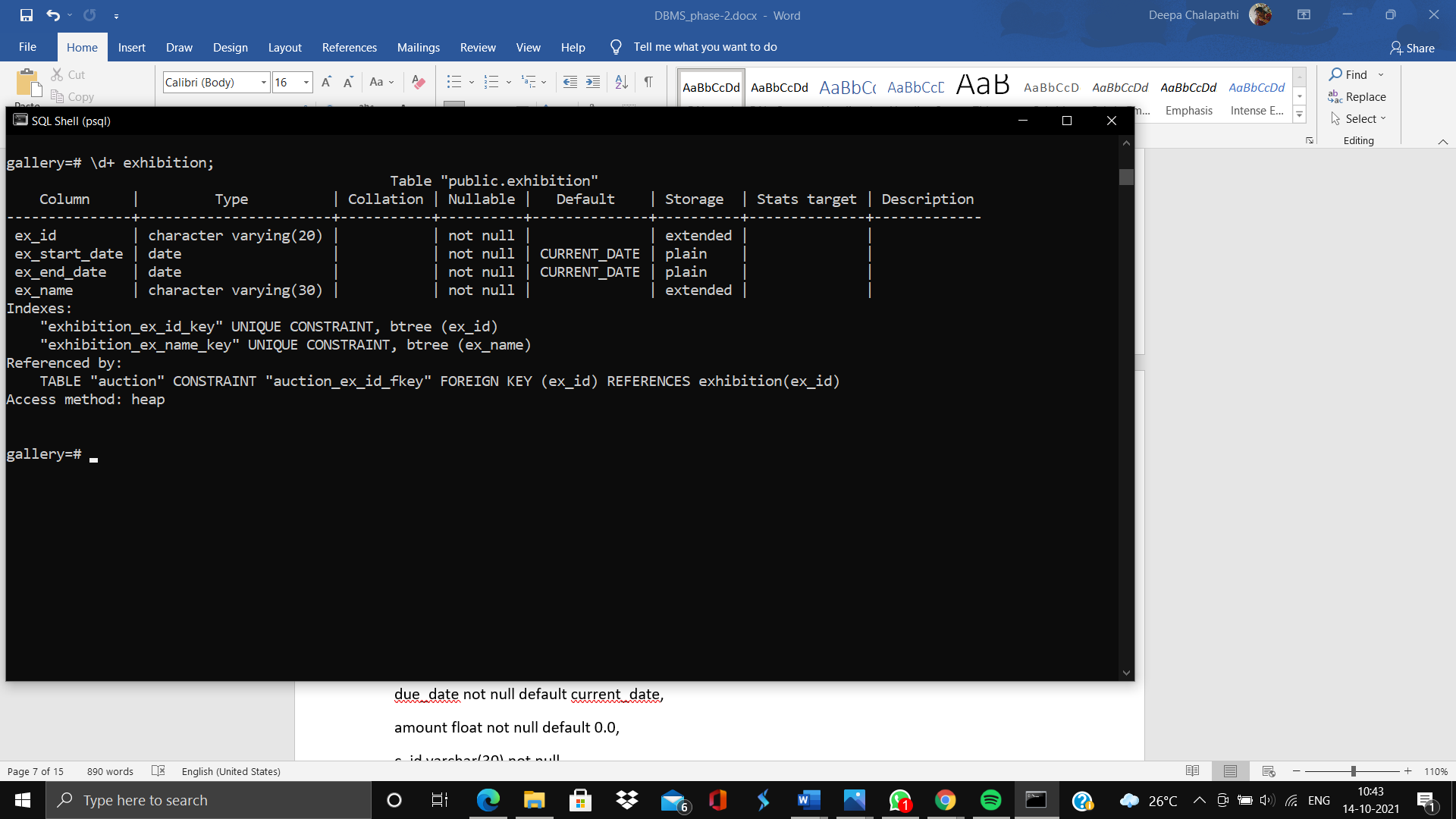
create table exhibition(

ex\_id varchar(20) not null unique;

ex\_start\_date date not null default CURRENT\_DATE,

ex\_end\_date date not null default CURRENT\_DATE,

ex\_name varchar(30) not null unique));



**Instalments:**

create table instalments(

i\_no int not null default 0,

p\_id not null,

pay\_date date not null default current\_date,

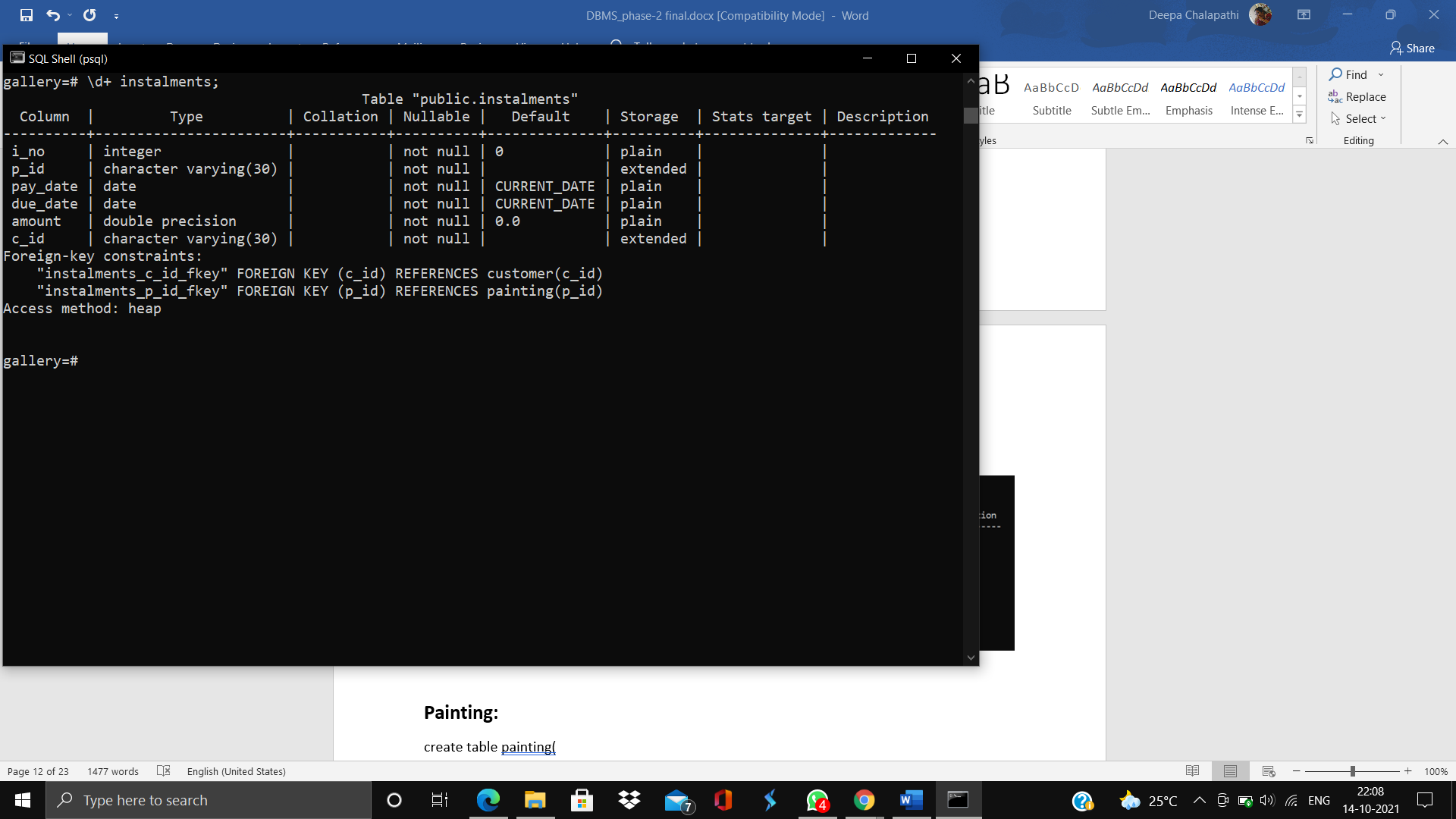
due\_date not null default current\_date,

amount float not null default 0.0,

c\_id varchar(30) not null,

foreign key(p\_id ) references painting(p\_id),

foreign key(c\_id) references customer(c\_id));



**Painting:**

create table painting(

p\_id varchar(30) not null unique primary key,

p\_name varchar(30) not null unique,

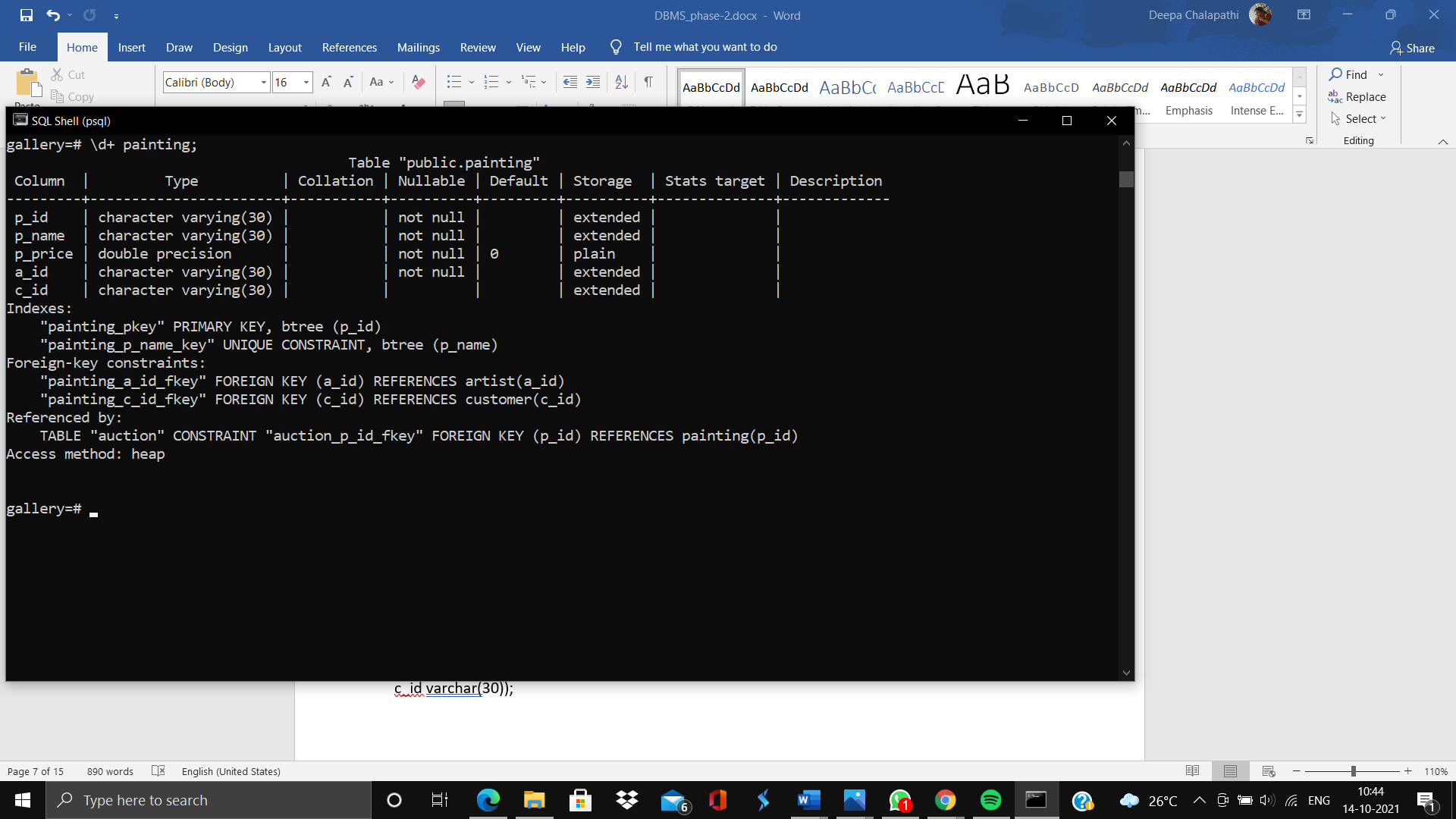
p\_price float not null default 0.0,

a\_id varchar(30) not null,

c\_id varchar(30)

foreign key(a\_id ) references artist(a\_id),

foreign key(c\_id) references customer(c\_id));



**Insert statements:**

**Artist:**

insert into artist values ('a1,'john','von','neumann','john@gmail.com', 'Male');

insert into artist values('a2','joanne','','wagner','joanne@gmail.com', 'Female');

insert into artist values('a3','karen','jane','baker','karen@gmail.com', 'Female');

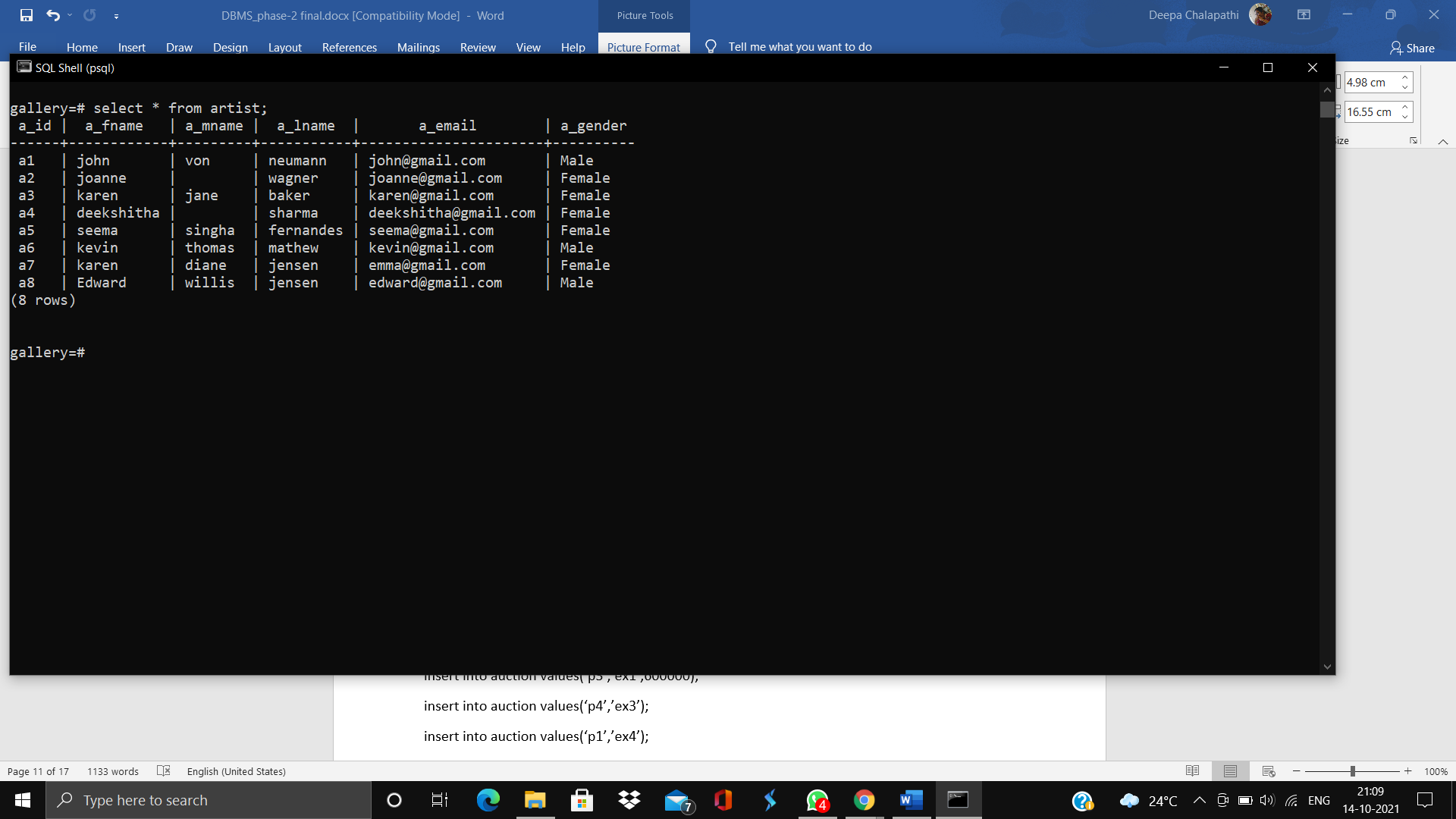
insert into artist values ('a4','deekshitha','','sharma','deekshitha@gmail.com', 'Female');

insert into artist values('a5','seema','singha','fernandes','seema@gmail.com', 'Female');

insert into artist values('a6','kevin','thomas','mathew','kevin@gmail.com' ,'Male');

insert into artist values('a7','karen','diane','jensen','emma@gmail.com', 'Female');

insert into artist values('a8','Edward','willis','jensen','edward@gmail.com', 'Male');



**Artist\_address:**

insert into artist\_address values(‘a1’,'432,Parkview Avenue,London');

insert into artist address values(‘a2’,’ '#52,Baker street,LA');

insert into artist\_address values(‘a3’);

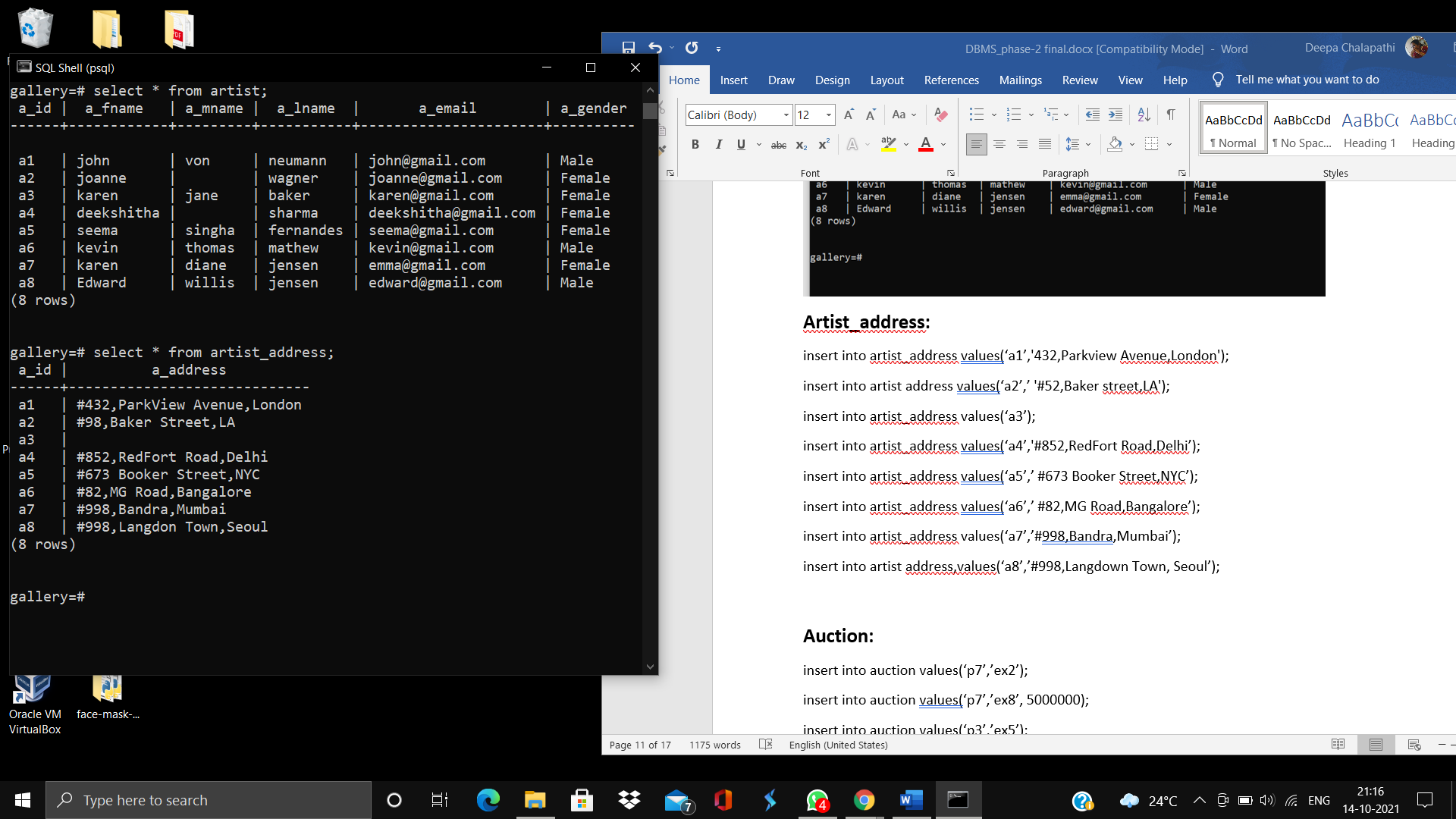
insert into artist\_address values(‘a4’,'#852,RedFort Road,Delhi’);

insert into artist\_address values(‘a5’,’ #673 Booker Street,NYC’);

insert into artist\_address values(‘a6’,’ #82,MG Road,Bangalore’);

insert into artist\_address values(‘a7’,’#998,Bandra,Mumbai’);

insert into artist address,values(‘a8’,’#998,Langdown Town, Seoul’);



**Artist\_phno:**

insert into artist\_phno values(‘a1’, 9801234567);

insert into artist\_phno values(‘a2’, 9087654310);

insert into artist\_phno values(‘a3’, 8901234567);

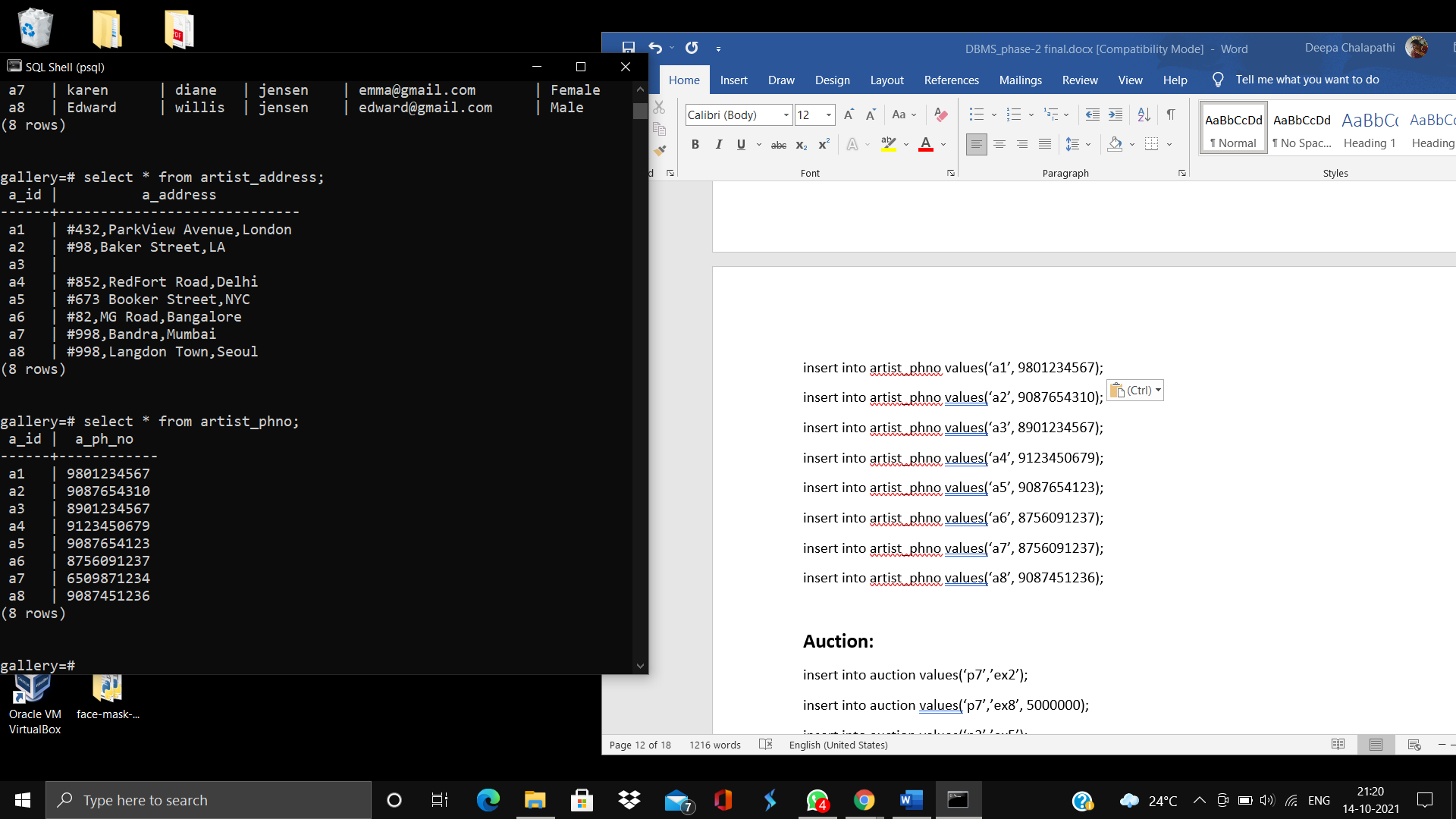
insert into artist\_phno values(‘a4’, 9123450679);

insert into artist\_phno values(‘a5’, 9087654123);

insert into artist\_phno values(‘a6’, 8756091237);

insert into artist\_phno values(‘a7’, 8756091237);

insert into artist\_phno values(‘a8’, 9087451236);



**Auction:**

insert into auction values(‘p7’,’ex2’);

insert into auction values(‘p7’,’ex8’, 5000000);

insert into auction values(‘p3’,’ex5’);

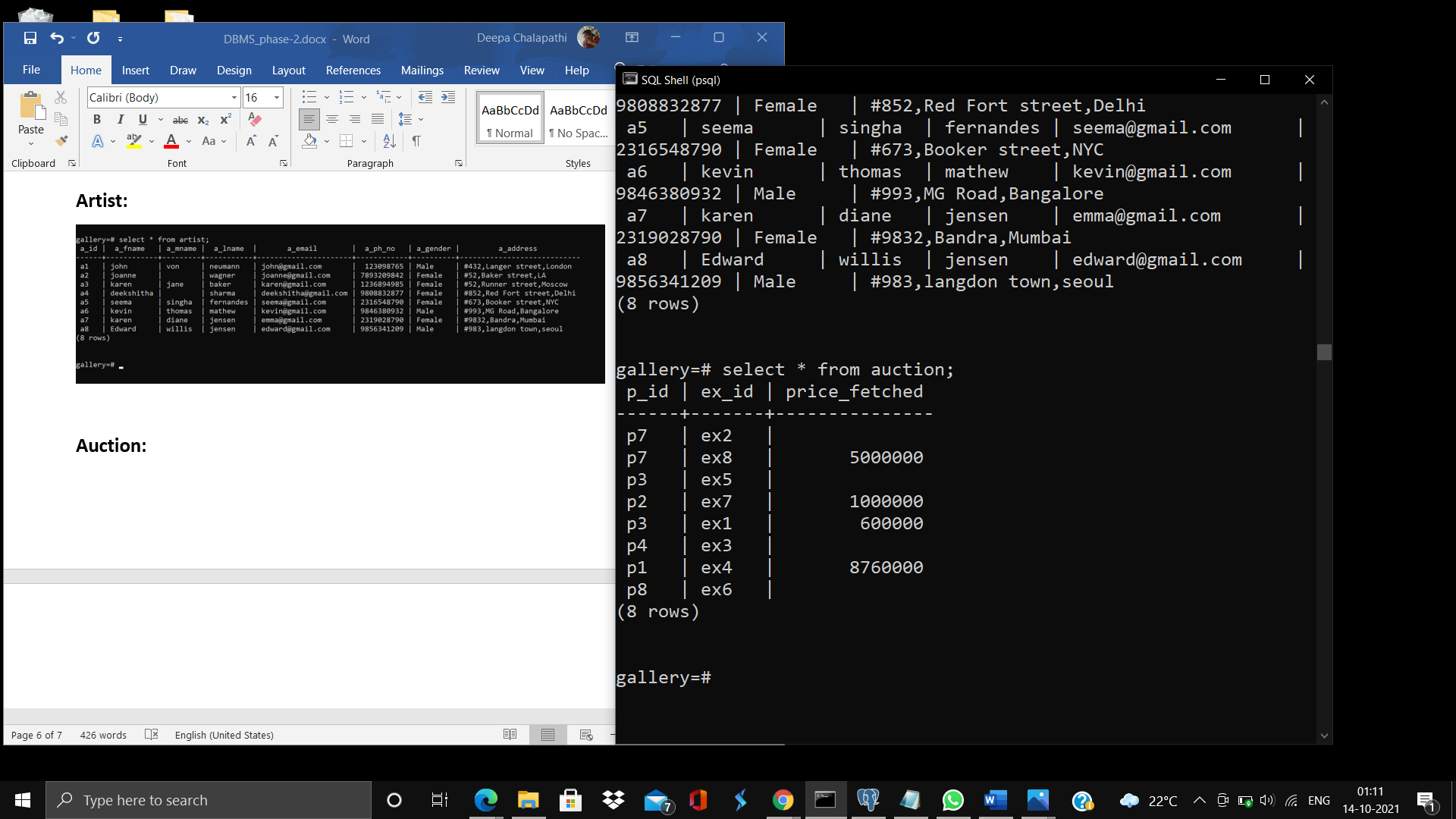
insert into auction values(‘p2’,’ex7’,1000000);

insert into auction values(‘p3’,’ex1’,600000);

insert into auction values(‘p4’,’ex3’);

insert into auction values(‘p1’,’ex4’);

insert into auction values(‘p8’,’ex6’,8760000);

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**Customer:**

insert into customer values('c1','maddie',NULL,'gomez','maddie@hotmail.com','Female');

insert into customer values('c2','niels','atom','bohr','niel@hotmail.com','Male');

insert into customer values('c3','ariana','grande','butera','thunderbolt@gmail.com','Male');

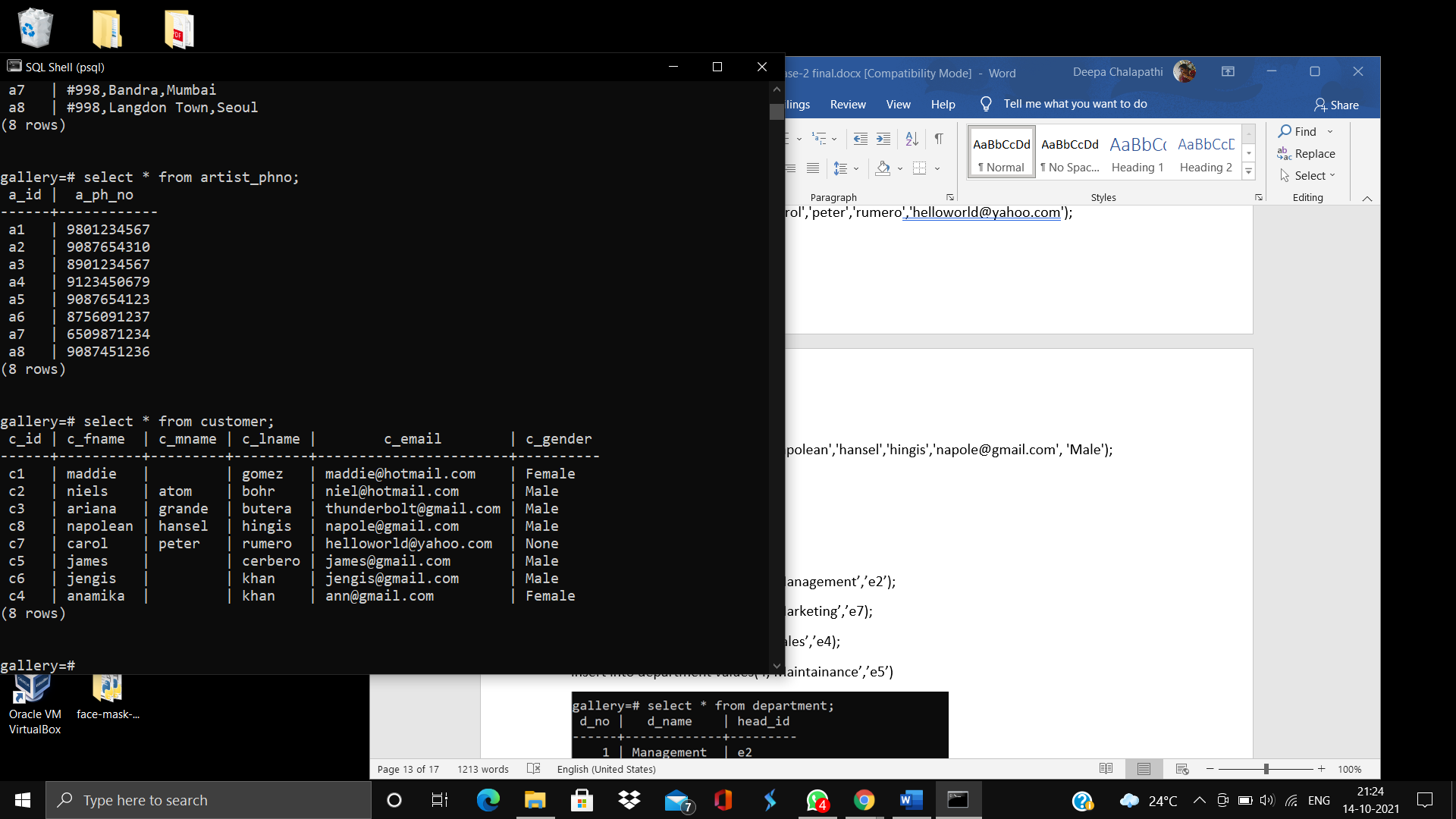
insert into customer values('c4','anamika','','khan','ann@gmail.com', 'Female');

insert into customer values('c5','james','','cerbero,'james@gmail.com', 'Male');

insert into customer values('c6','jengis','','khan','jengis@gmail.com', 'Male','');

insert into customer values('c7','carol','peter','rumero','helloworld@yahoo.com');

insert into customer values('c8','napolean','hansel','hingis','napole@gmail.com', 'Male');



**Customer\_address:**

insert into customer\_address values(‘c1’);

insert into customer\_address values(‘c2’, ‘#583,street,alabama’);

insert into customer\_address values(‘c3’,’ #457,7th street,NewJersey’);

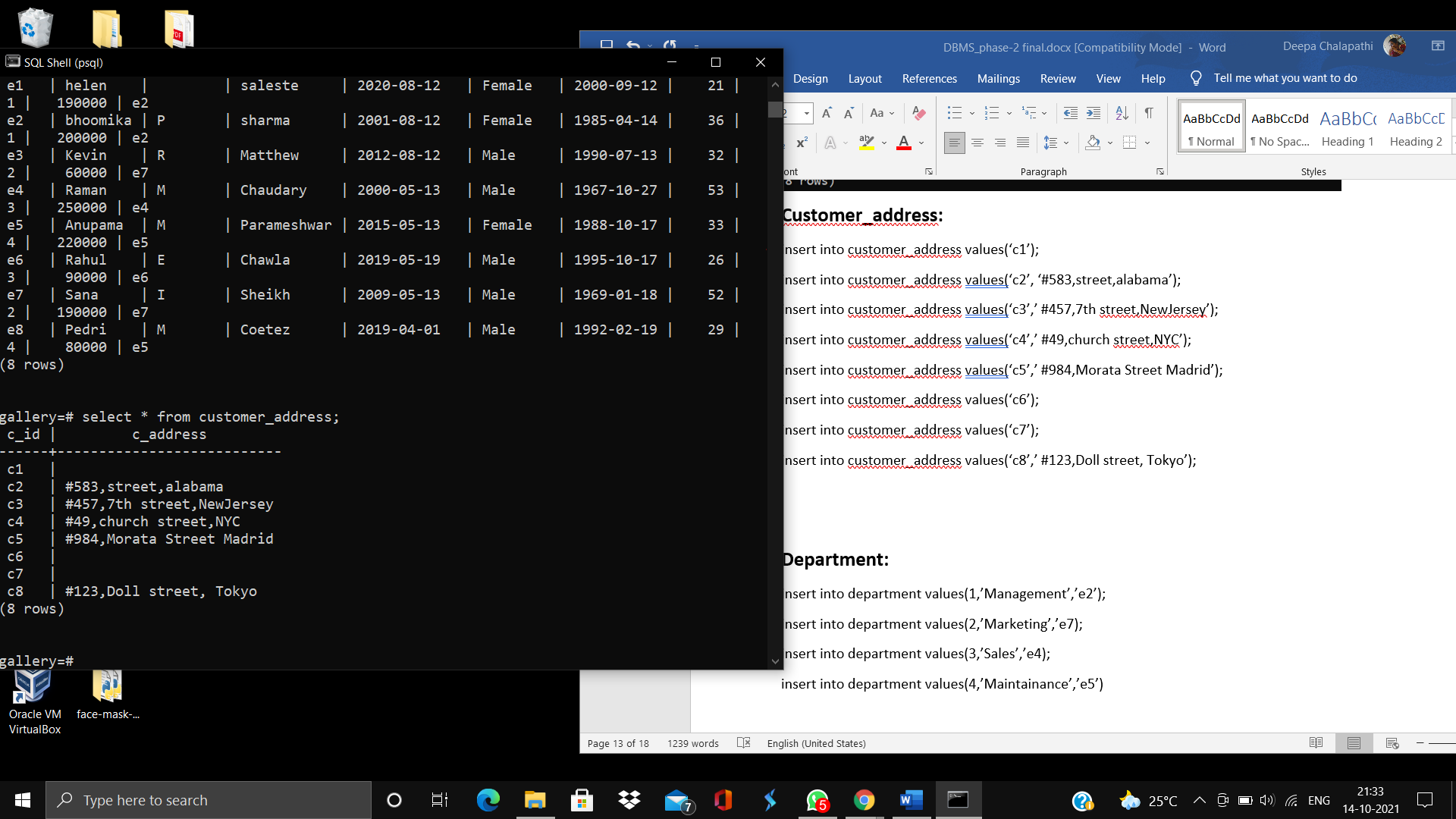
insert into customer\_address values(‘c4’,’ #49,church street,NYC’);

insert into customer\_address values(‘c5’,’ #984,Morata Street Madrid’);

insert into customer\_address values(‘c6’);

insert into customer\_address values(‘c7’);

insert into customer\_address values(‘c8’,’ #123,Doll street, Tokyo’);



**Customer\_phno:**

insert into customer\_phno values(‘c1’, 987654321);

insert into customer\_phno values(‘c2’, 9083421091);

insert into customer\_phno values(‘c3’, 9879309872);

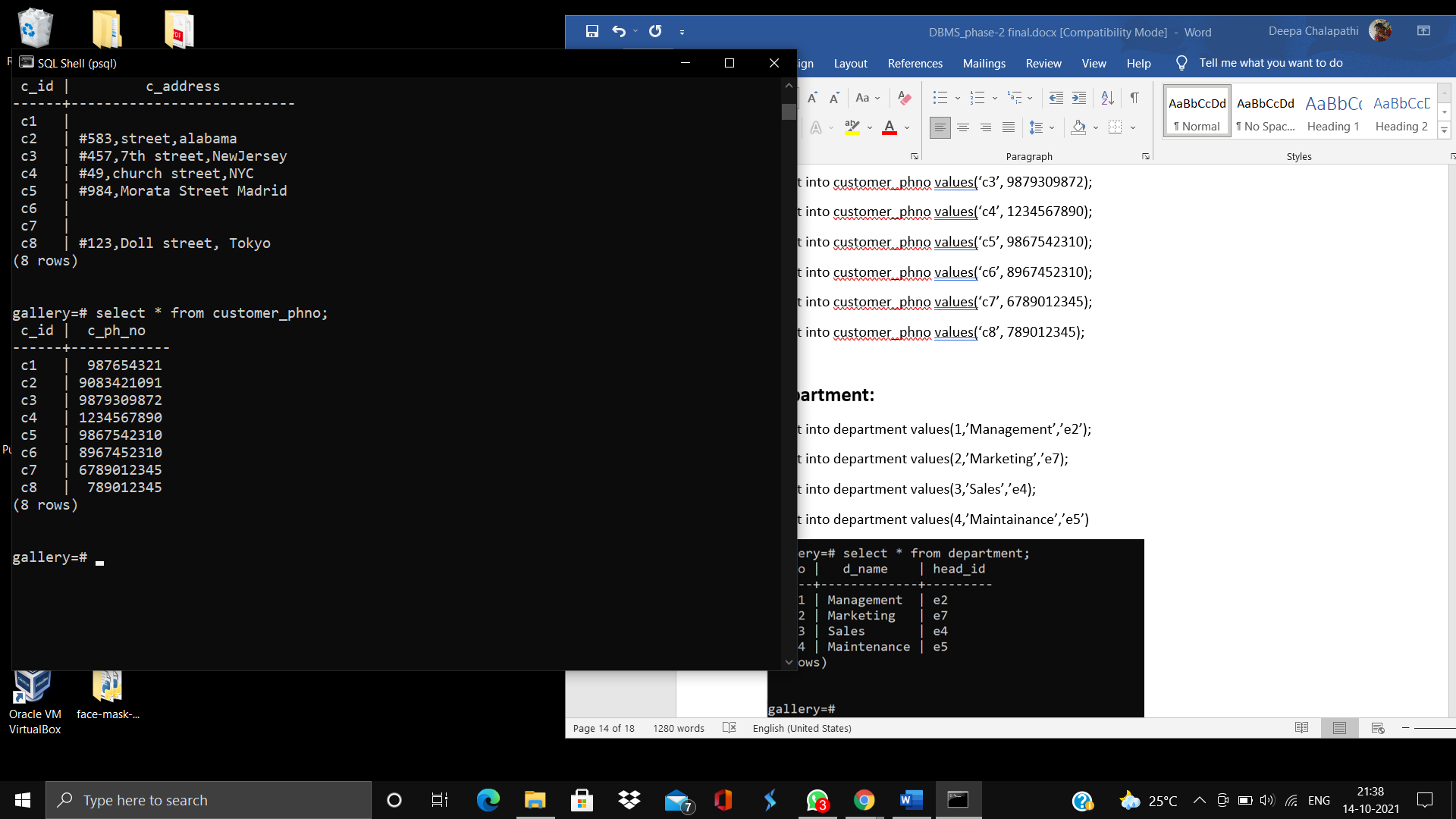
insert into customer\_phno values(‘c4’, 1234567890);

insert into customer\_phno values(‘c5’, 9867542310);

insert into customer\_phno values(‘c6’, 8967452310);

insert into customer\_phno values(‘c7’, 6789012345);

insert into customer\_phno values(‘c8’, 789012345);



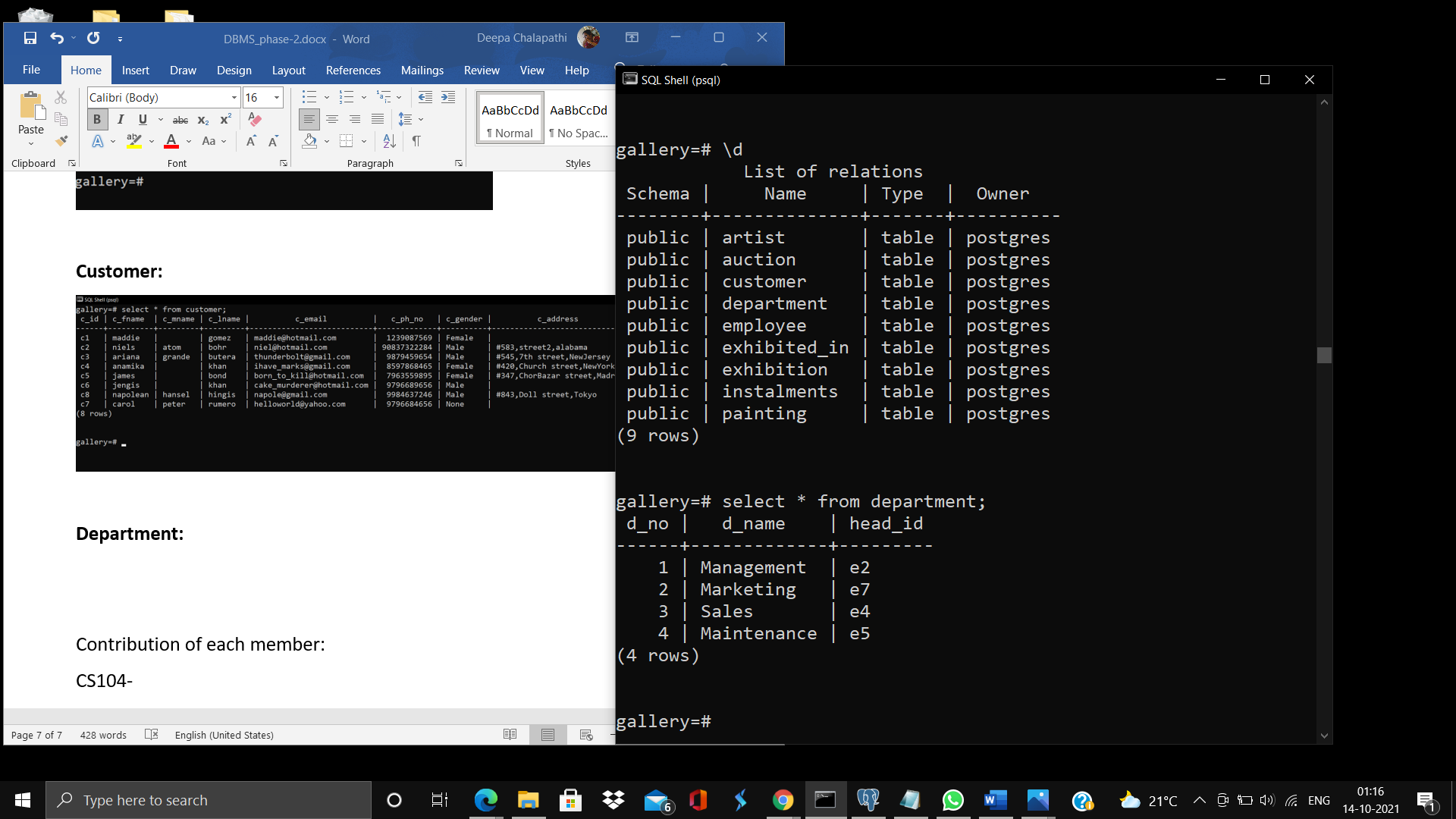
**Department:**

insert into department values(1,’Management’,’e2’);

insert into department values(2,’Marketing’,’e7);

insert into department values(3,’Sales’,’e4);

insert into department values(4,’Maintainance’,’e5’)

****

**Employee:**

insert into employee values('e1','helen','','saleste','12-08-2020','Female','12-9-2000',21,01,190000,’e2’);

insert into employee values(‘e2’,’bhoomika’,’P’,’sharma’,’2001-08-12’,’female,36,1,200000,’e2’);

insert into employee values(‘e3’,‘Kevin ‘,’R ‘,‘Matthew ‘,‘2012-08-12’,’ Male ‘,’1990-07-13’, 32, 2 ,60000,‘e7’)

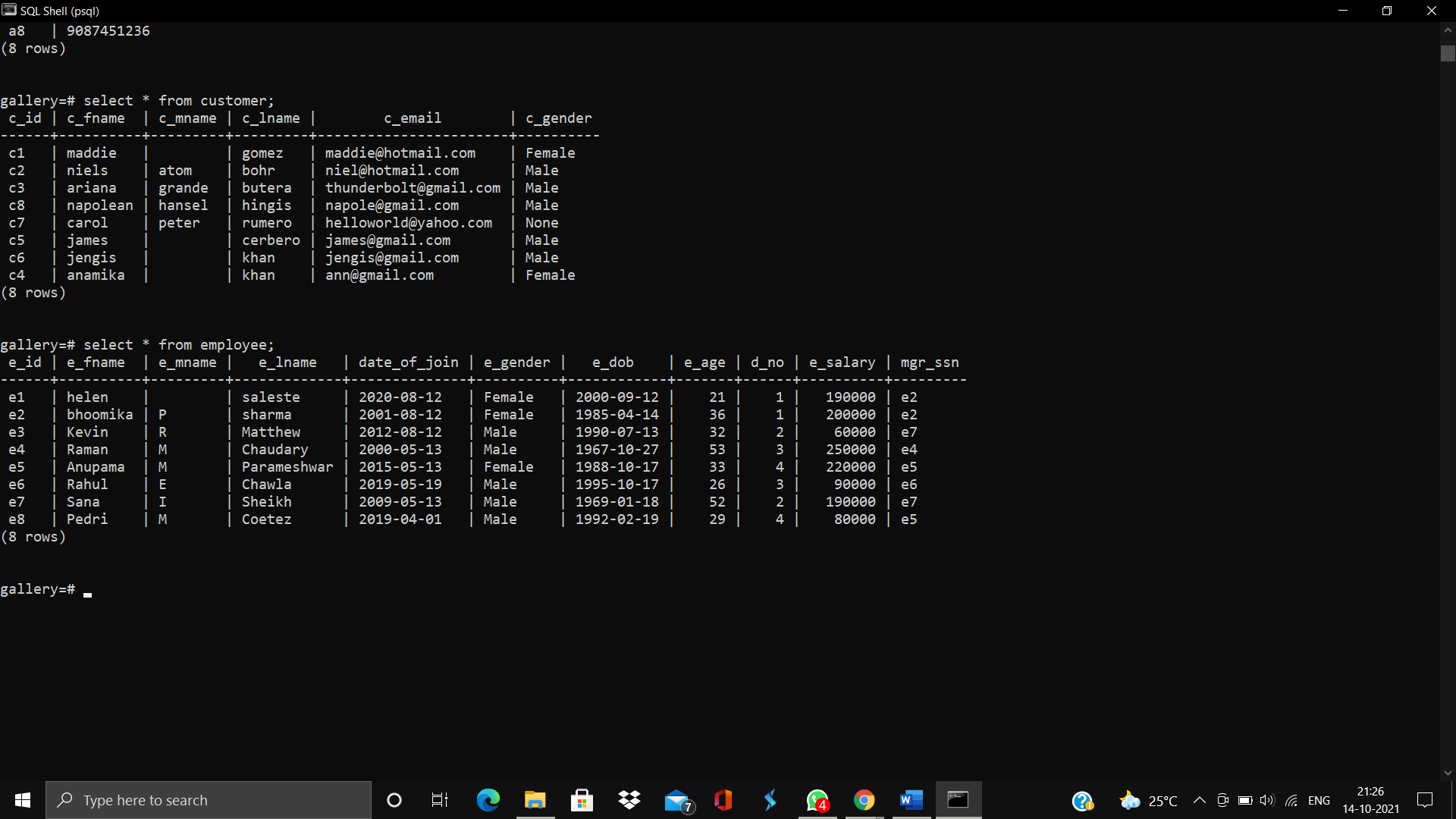
insert into employee values(e4, ‘Raman ‘,‘M’, ‘Chaudary’, ‘2000-05-13 ‘,‘Male,’1967-10-27’, 53,3 ,250000 , ‘e4’)

insert into employee values(‘e5‘,‘Anupama’ ,‘M ‘,‘Parameshwar’,’2015-05-13’,‘Female’,‘1988-10-17 ‘,33 ,4 ,220000,‘e5’);

insert into employee values (‘e6 ‘,‘Rahul’,‘E ‘,‘Chawla’,‘2019-05-19 ‘,‘Male’,‘1995-10-17’, 26 ,3, 90000, ‘e6’);

inset into employee values(‘e7 ,’Sana,’I’ , ‘Sheikh’ ,’2009-05-13’,‘Male’ ,‘1969-01-18’ ,52,2, 190000, ‘e7’);

insert into employee values(‘e8’ , ‘Pedri’,‘M’ ,‘Coetez’ ,‘2019-04-01’,‘Male ‘,1992-02-19, 29,4,80000, ‘e5’);

****

**Employee\_address:**

insert into employee\_address values(‘e1’,’ #456,Langdon town, Bangalore’);

insert into employee\_address values(‘e2’,’ #46,Richmond Circle, Bangalore’);

insert into employee\_address values(‘e3’,’ #189,MG Road,Bangalore’);

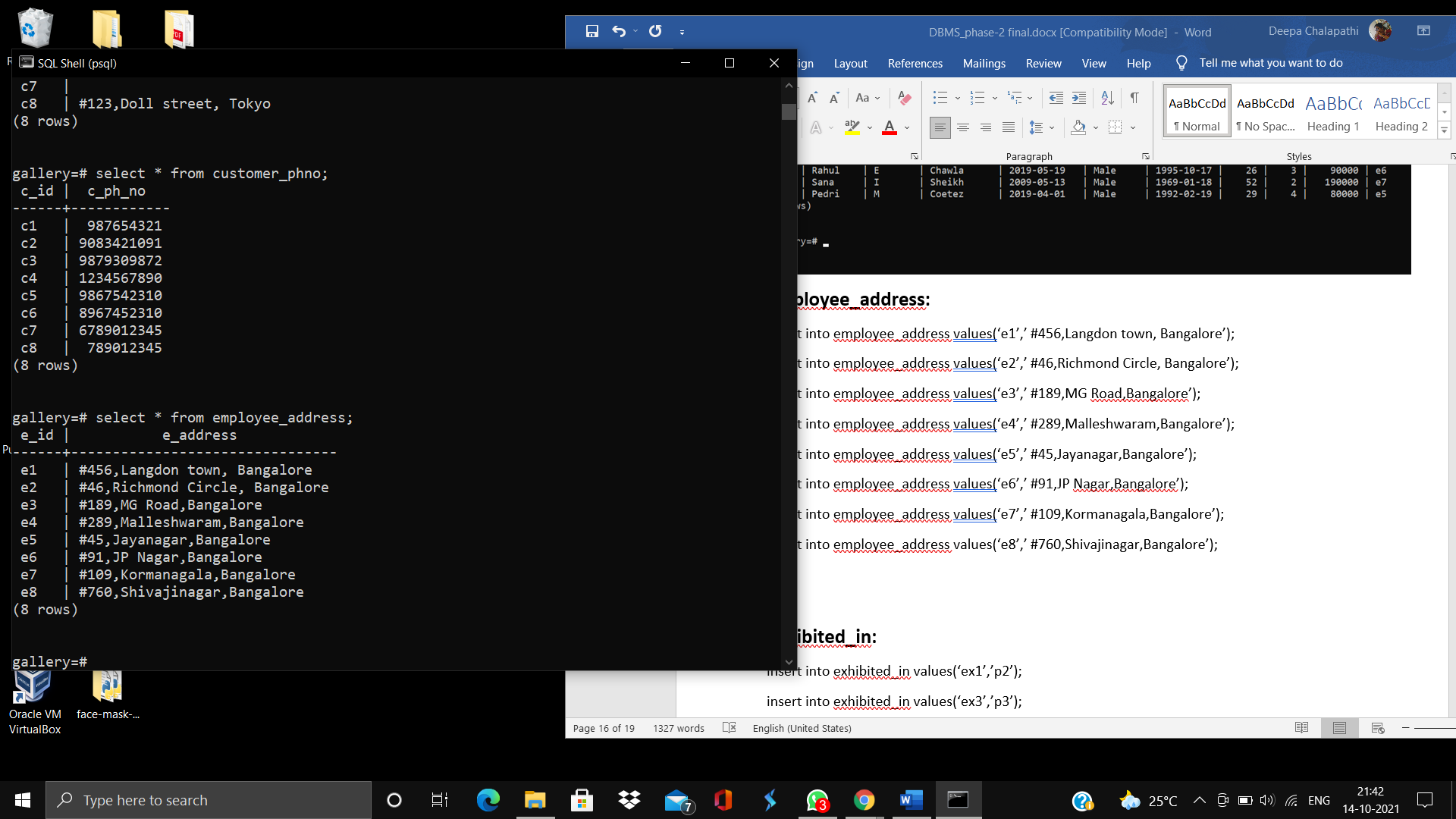
insert into employee\_address values(‘e4’,’ #289,Malleshwaram,Bangalore’);

insert into employee\_address values(‘e5’,’ #45,Jayanagar,Bangalore’);

insert into employee\_address values(‘e6’,’ #91,JP Nagar,Bangalore’);

insert into employee\_address values(‘e7’,’ #109,Kormanagala,Bangalore’);

insert into employee\_address values(‘e8’,’ #760,Shivajinagar,Bangalore’);



**Employee\_phno:**

insert into employee\_phno values(‘e1’, 9876543210);

insert into employee\_phno values(‘e2’, 9038372999);

insert into employee\_phno values(‘e3’, 8897655432);

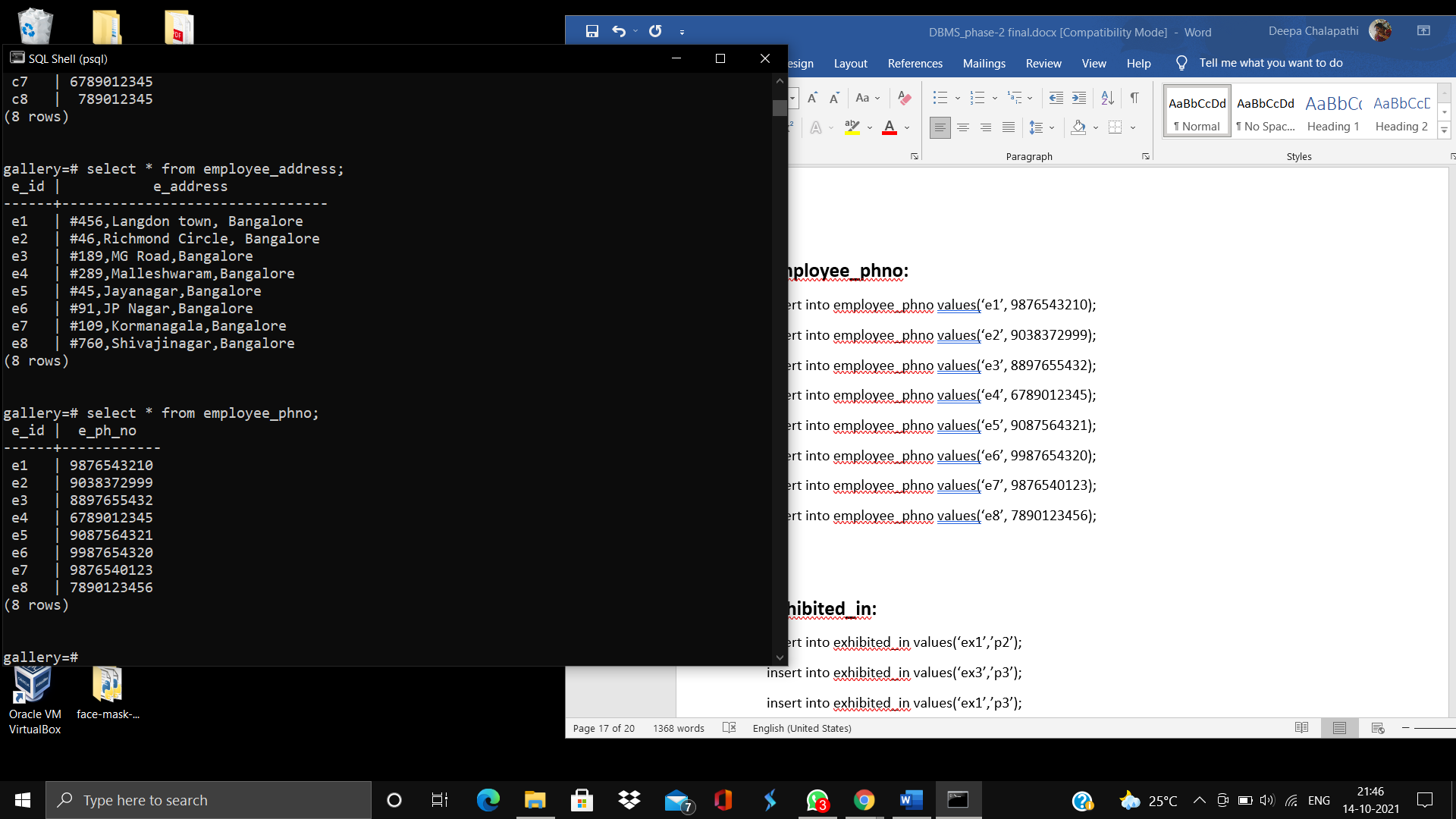
insert into employee\_phno values(‘e4’, 6789012345);

insert into employee\_phno values(‘e5’, 9087564321);

insert into employee\_phno values(‘e6’, 9987654320);

insert into employee\_phno values(‘e7’, 9876540123);

insert into employee\_phno values(‘e8’, 7890123456);



**Exhibited\_in:**

insert into exhibited\_in values(‘ex1’,’p2’);

insert into exhibited\_in values(‘ex3’,’p3’);

insert into exhibited\_in values(‘ex1’,’p3’);

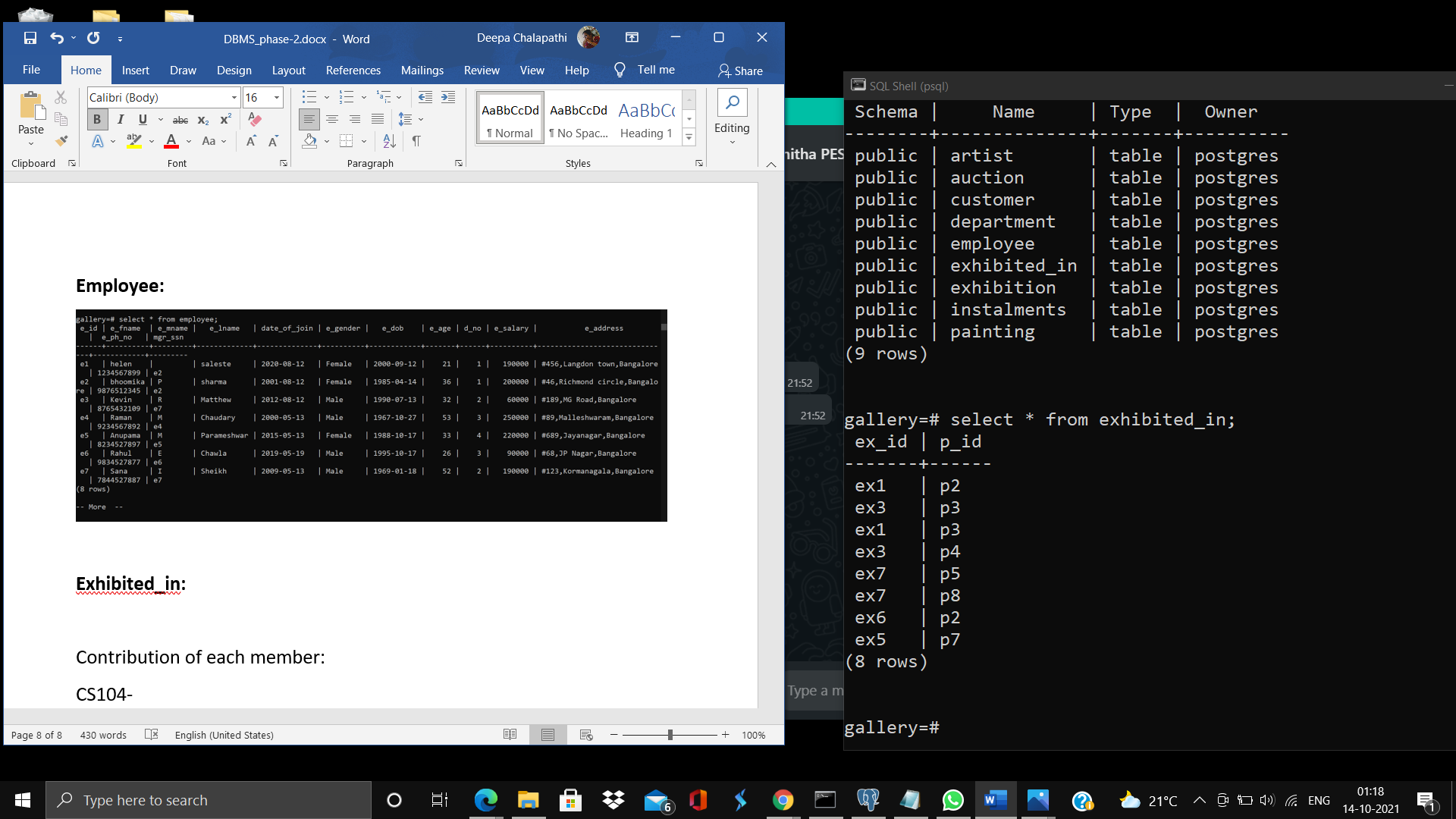
insert into exhibited\_in values(‘ex3’,’p4’);

insert into exhibited\_in values(‘ex7,’p5’);

insert into exhibited\_in values(‘ex7’,’p8’);

insert into exhibited\_in values(‘ex6’,’p2’);

insert into exhibited\_in values(‘ex5’,’p7’);

****

**Exhibition:**

insert into exhibition values('ex1','12-02-2019','14-02-2019','Nature and the Wild');

insert into exhibition values('ex2','12-08-2014','19-08-2014','Firing rage');

insert into exhibition values('ex3','20-01-2020','23-01-2020','View of the mind');

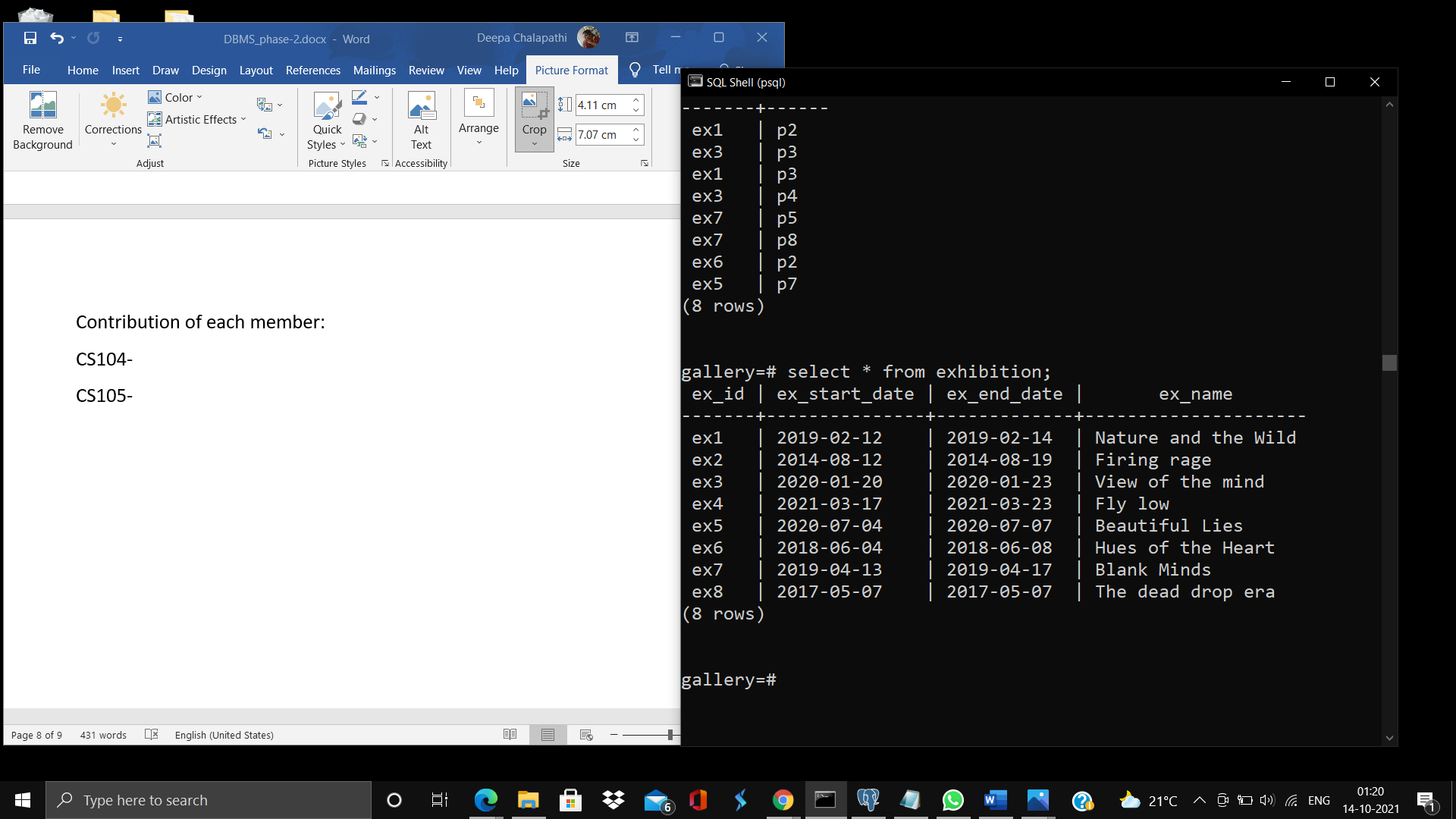
insert into exhibition values('ex4','17-03-2021','23-03-2021','Fly low');

insert into exhibition values('ex5','04-07-2020','07-07-2020','Beautiful Lies');

insert into exhibition values('ex6','04-06-2018','08-06-2018','Hues of the Heart');

insert into exhibition values('ex7','13-04-2019','17-04-2019','Blank Minds');

insert into exhibition values('ex8','7-05-2017','7-05-2017','The dead drop era');

****

**Instalments:**

insert into instalments values(1,'p1','12-02-2019','14-02-2019',10000,'c3');

insert into instalments values(2,'p1','14-02-2019','14-03-2019',10000,'c3');

insert into instalments values(1,'p5','17-07-2021','17-05-2021',30000.98,'c8');

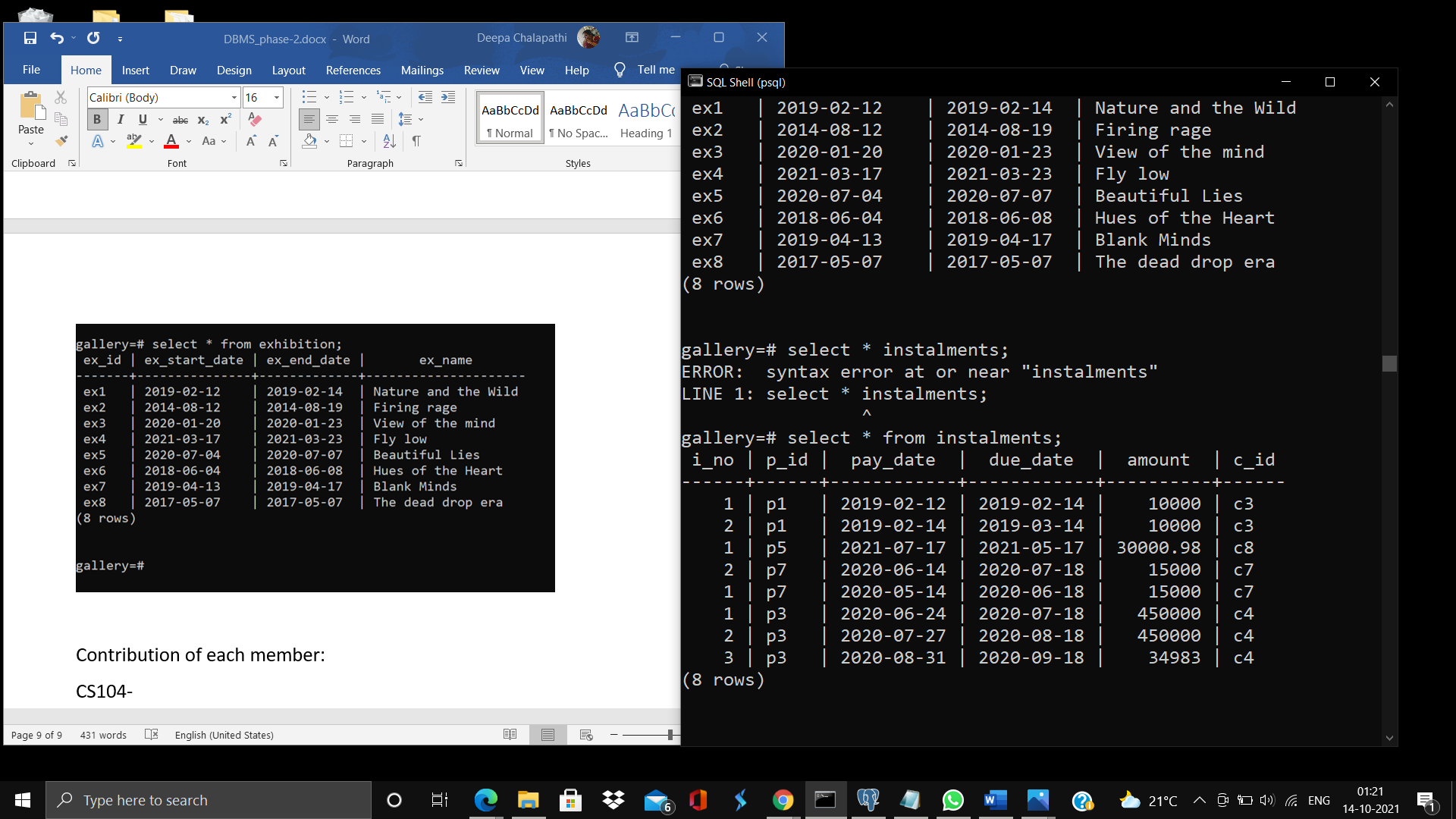
insert into instalments values(2,'p7','14-06-2020','18-07-2020',15000,'c7');

insert into instalments values(1,'p7','14-05-2020','18-06-2020',15000,'c7');

insert into instalments values(1,'p3','24-06-2020','18-07-2020',450000,'c4');

insert into instalments values(2,'p3','27-07-2020','18-08-2020',450000,'c4');

insert into instalments values(3,'p3','31-08-2020','18-09-2020',34983,'c4');

****

**Painting:**

insert into painting values('p1','sulking river',120000,'a2','c3');

insert into painting values('p2','the imperfectly perfect',120000,'a2','c4');

insert into painting values('p3','world though this eyes',934983,'a5','c4');

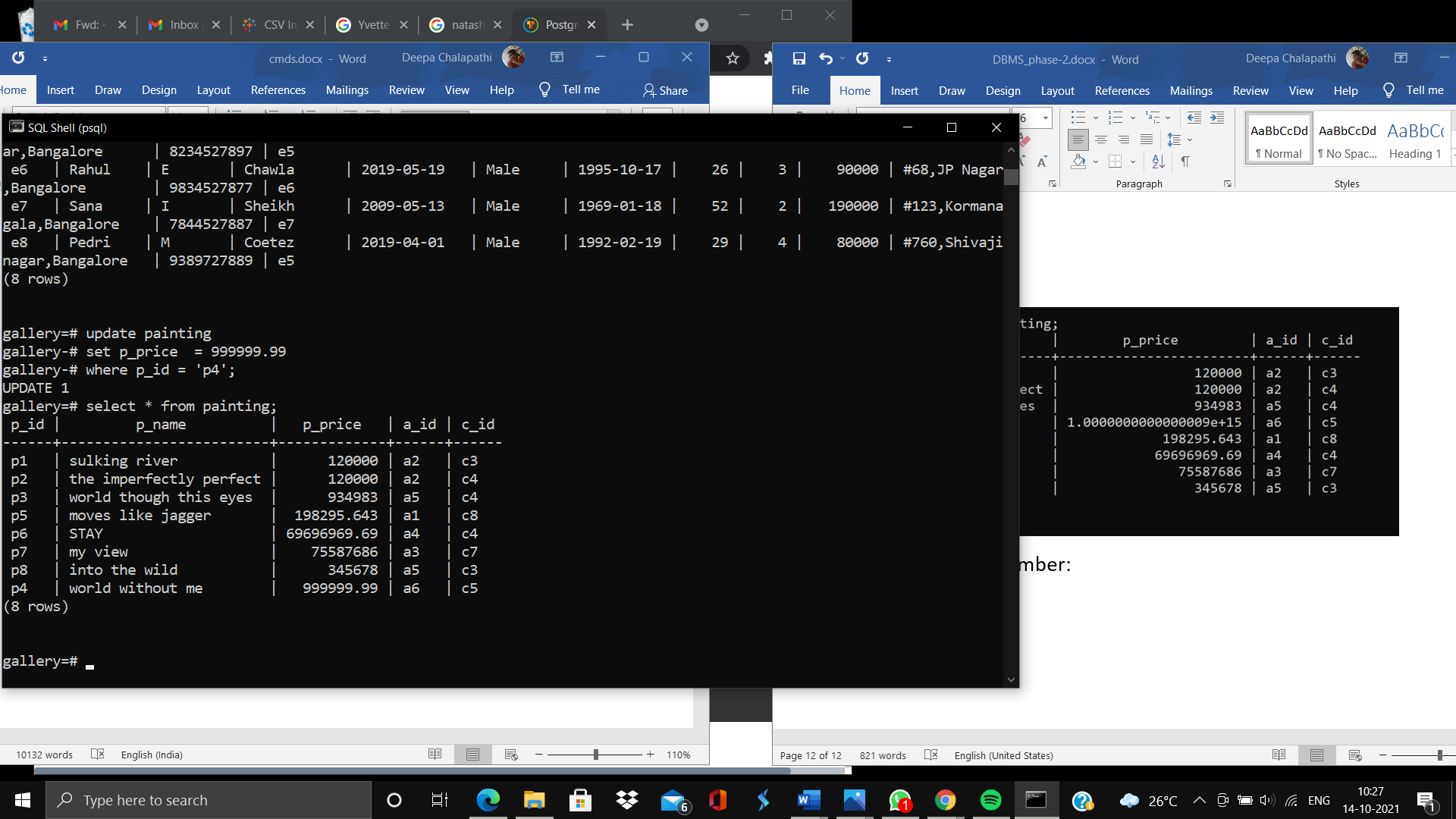
insert into painting values('p4','world without me',999999.99,'a6','c5');

insert into painting values('p5','moves like jagger',198295.643,'a1','c8');

insert into painting values('p6','STAY',69696969.69,'a4','c4');

insert into painting values('p7','my view',75587686,'a3','c7');

insert into painting values('p8','into the wild',345678,'a5','c3');

****

**Contribution of each member:**

Deekshitha- Relational diagram, Insert statements for customer relation, Report of the relational diagram

Deepa-Create and Insert commands, report for the insert and create statements