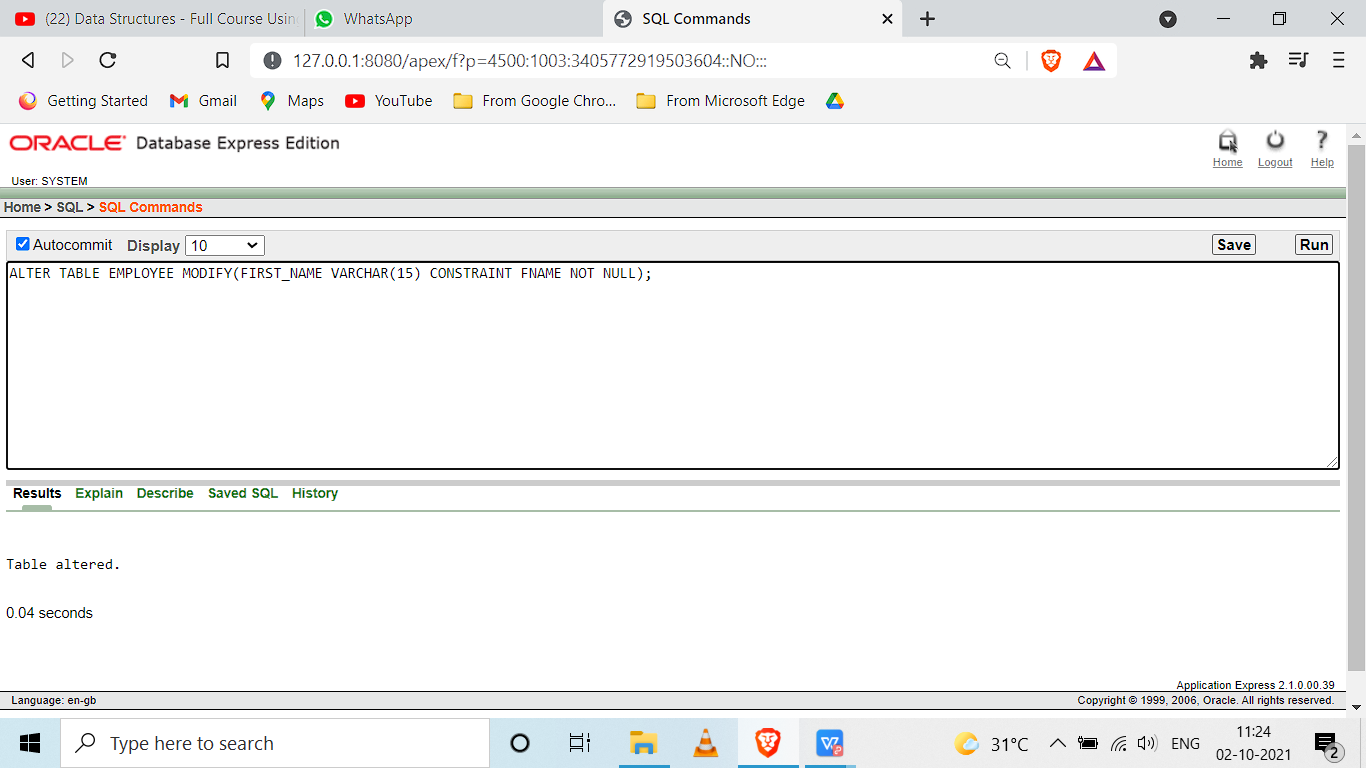
**DBMS EXERCISE : 2**

**NAME : KAUSHAL BAGHEL**  **ROLL NO 21MAI0003**

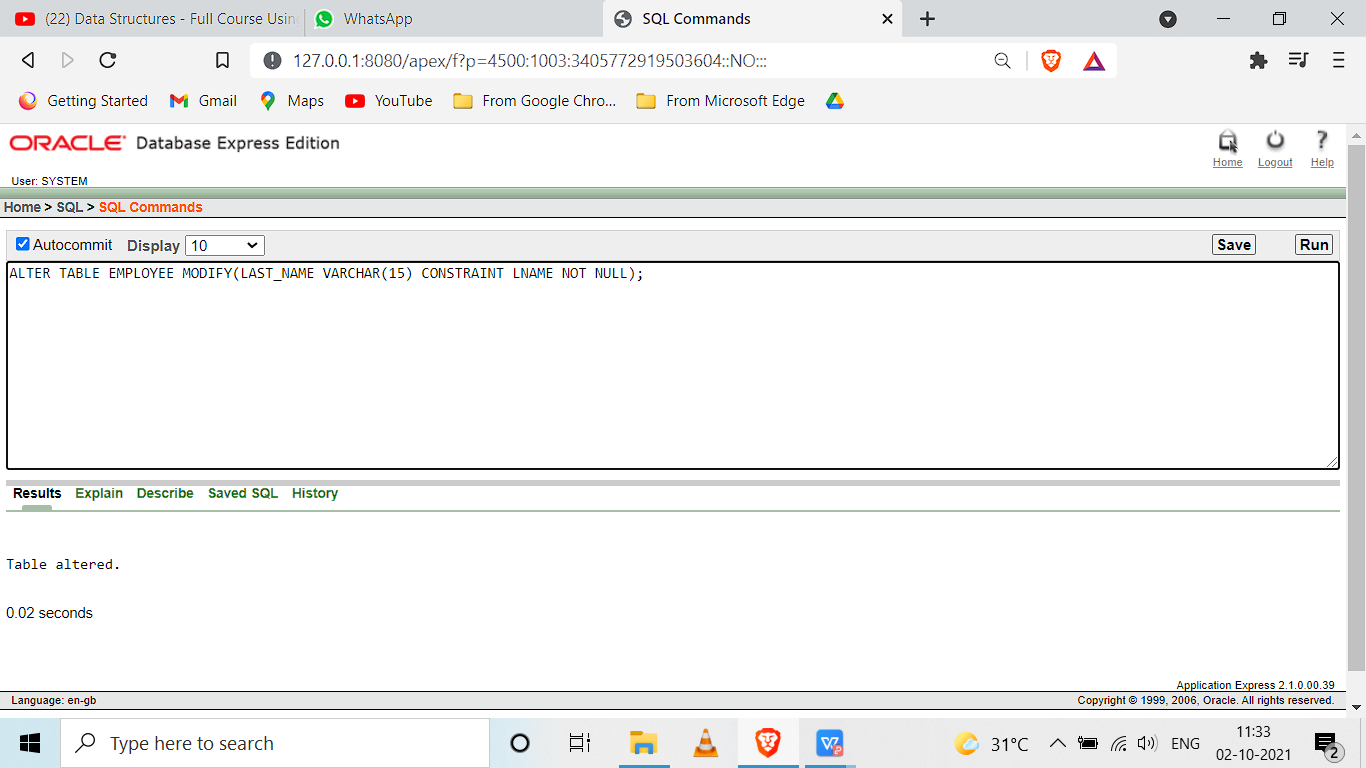
Aim: To know how the constraints are used to make table is consistent.

**ADDING CONSTRAINT IN EMPLOYEE TABLE.**

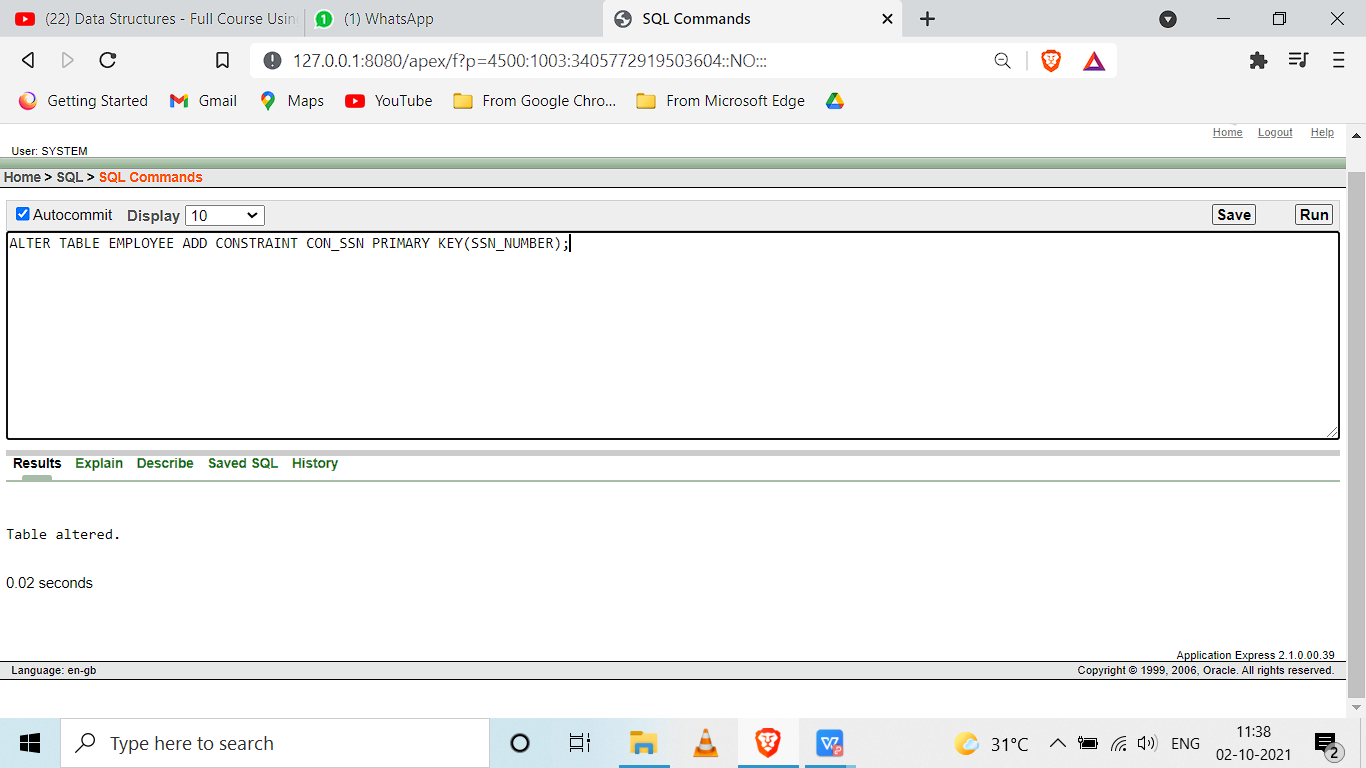
ALTER TABLE EMPLOYEE MODIFY(FIRST\_NAME VARCHAR(15) CONSTRAINT FNAME NOT NULL);



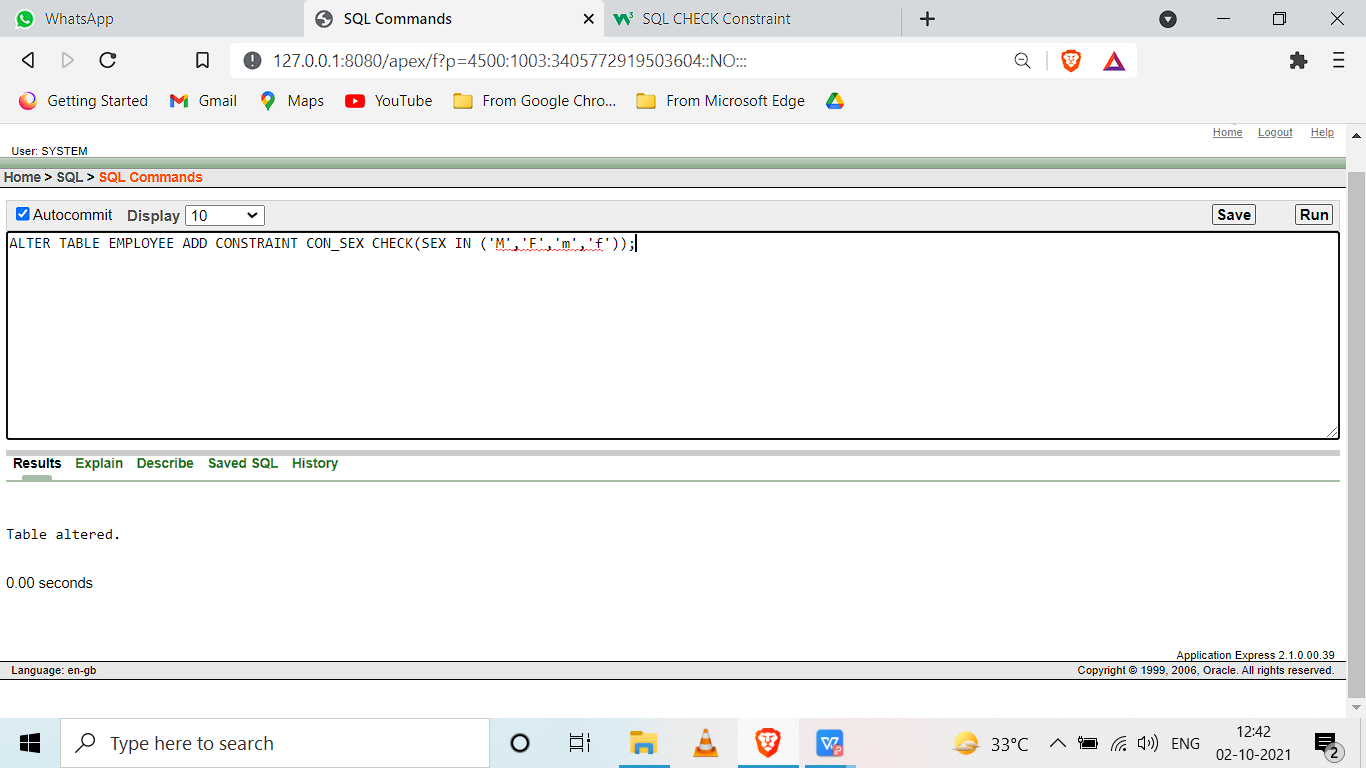
ALTER TABLE EMPLOYEE MODIFY(LAST\_NAME VARCHAR(15) CONSTRAINT LNAME NOT NULL);



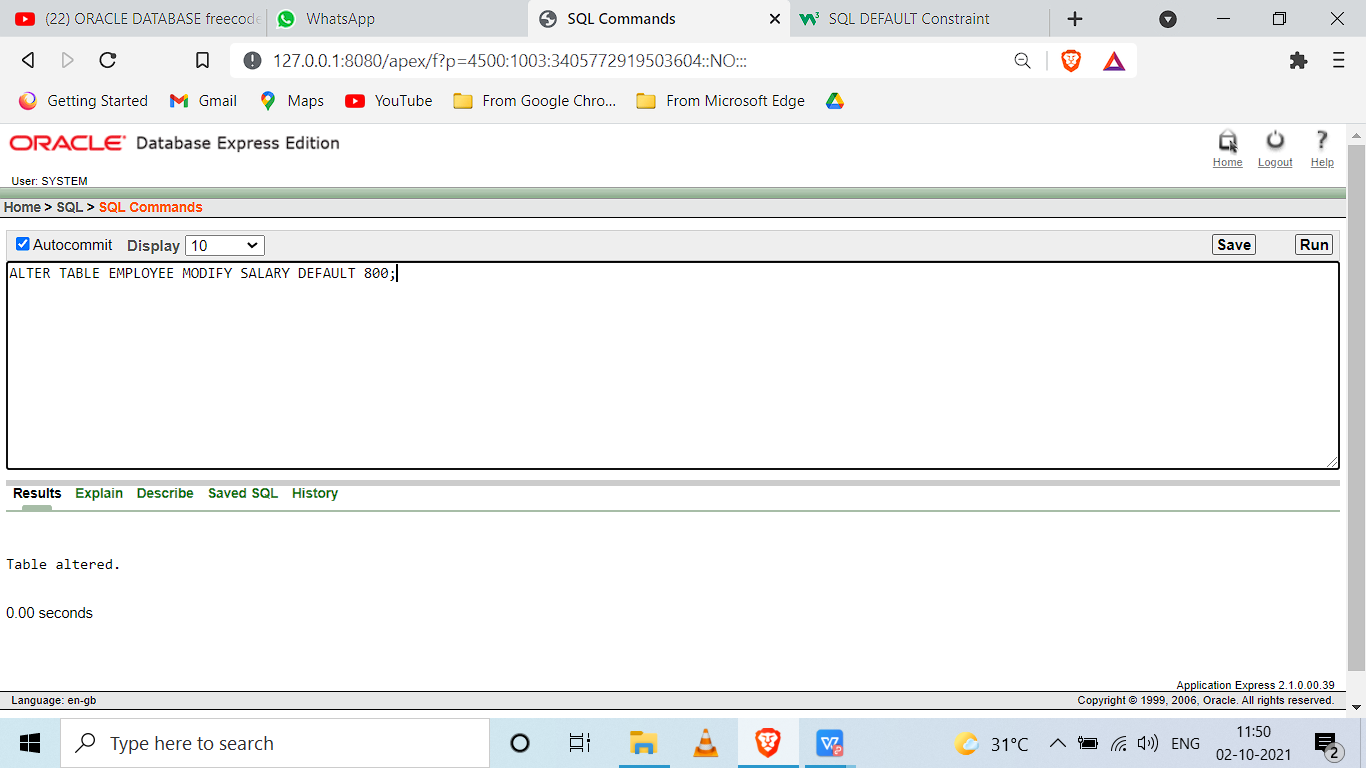
ALTER TABLE EMPLOYEE ADD CONSTRAINT CON\_SSN PRIMARY KEY(SSN\_NUMBER);



ALTER TABLE EMPLOYEE ADD CONSTRAINT CON\_SEX CHECK(SEX IN ('M','F','m','f'));



ALTER TABLE EMPLOYEE MODIFY SALARY DEFAULT 800;



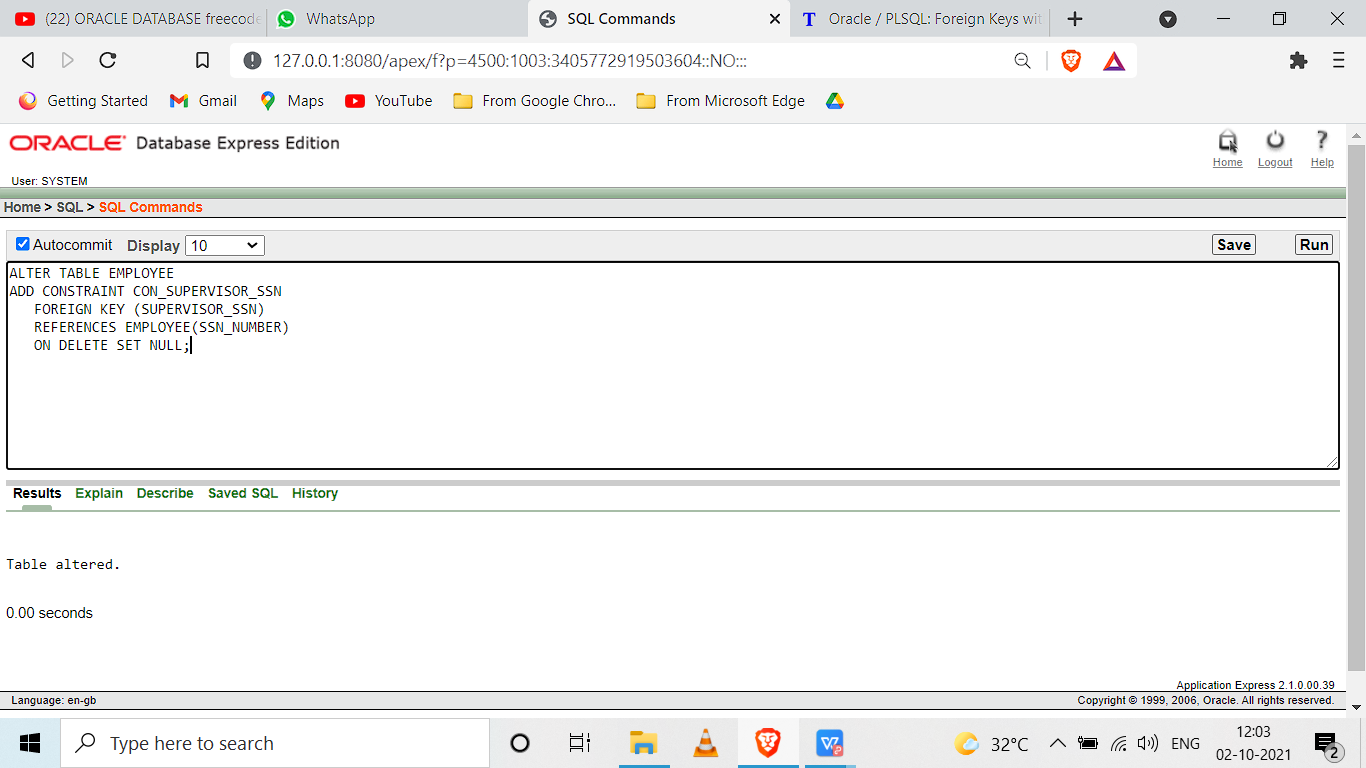
ALTER TABLE EMPLOYEE

ADD CONSTRAINT CON\_SUPERVISOR\_SSN

FOREIGN KEY (SUPERVISOR\_SSN)

REFERENCES EMPLOYEE(SSN\_NUMBER)

ON DELETE SET NULL;



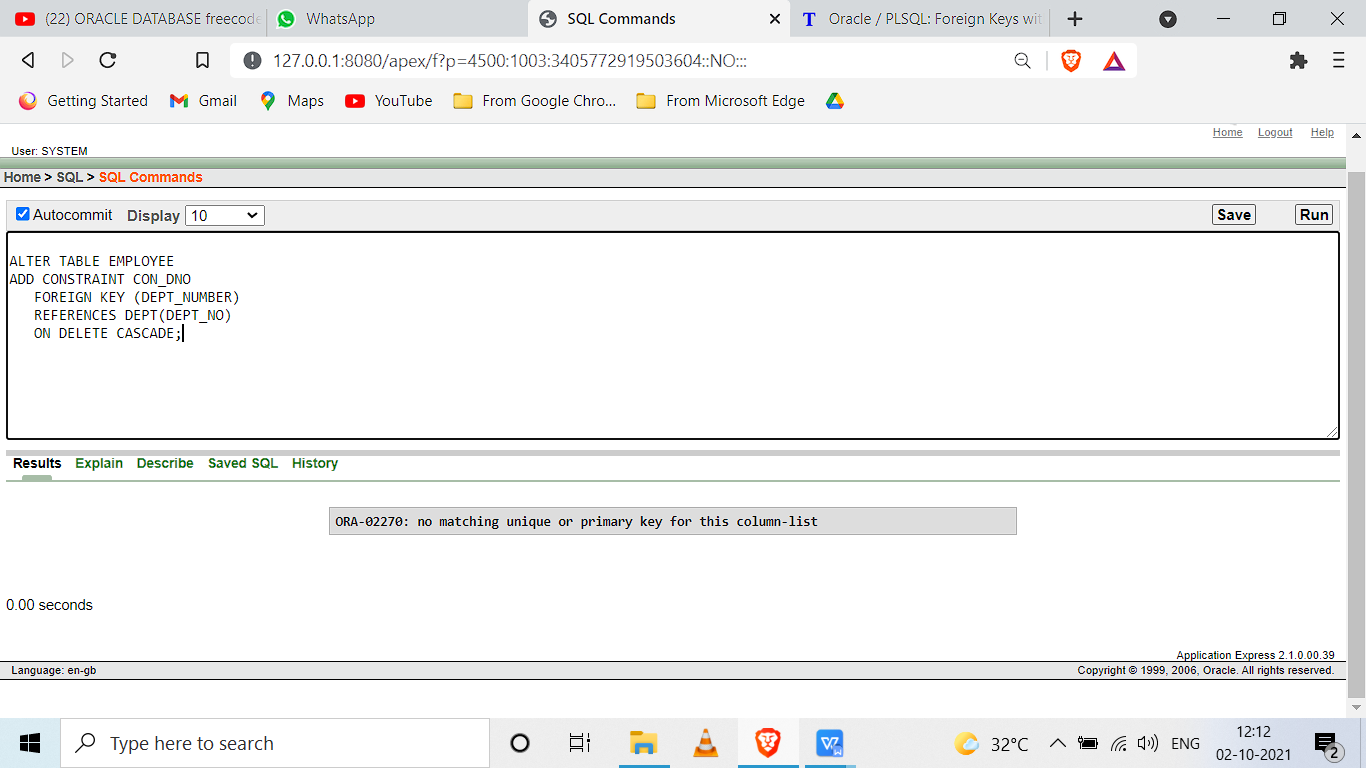
ALTER TABLE EMPLOYEE

ADD CONSTRAINT CON\_DNO

FOREIGN KEY (DEPT\_NUMBER)

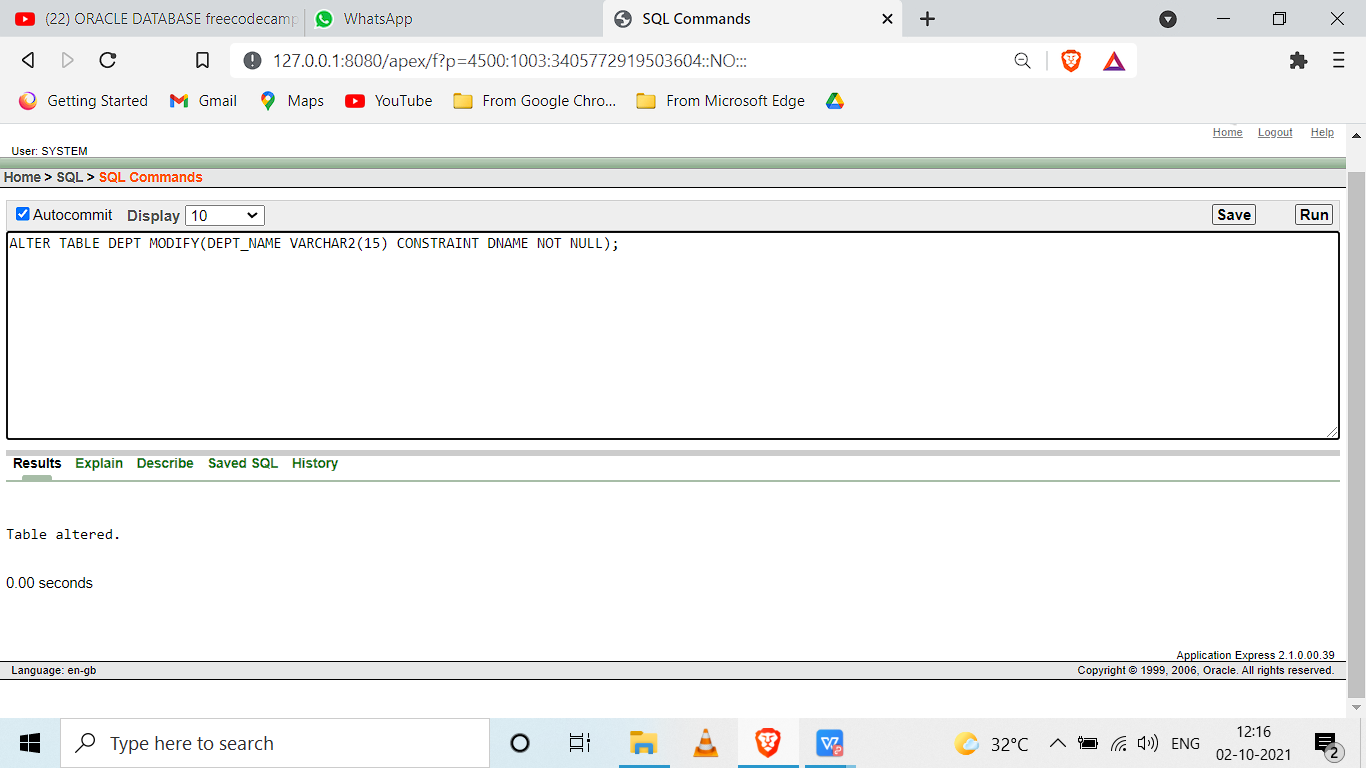
REFERENCES DEPARTMENT(DEPT\_NO)

ON DELETE CASCADE;

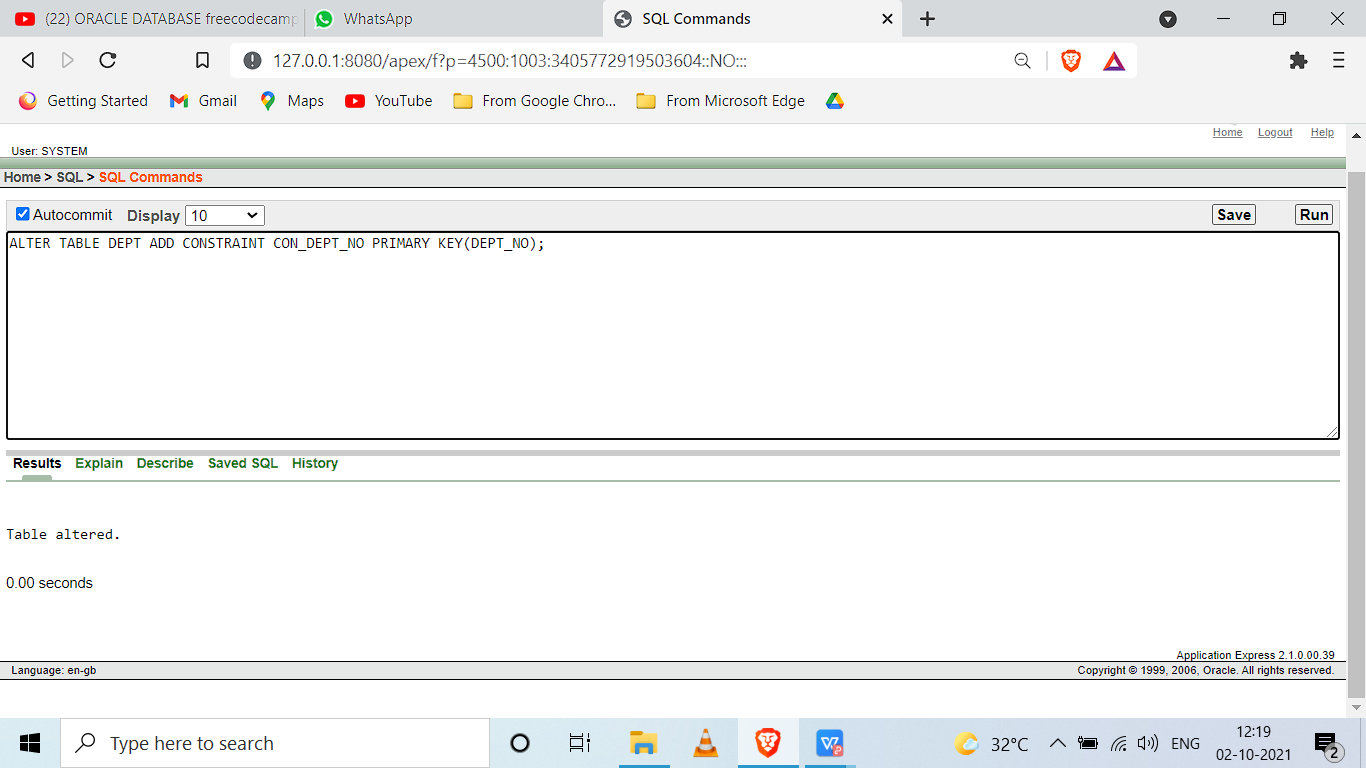


**ADDING CONSTRAINT IN DEPARTMENT TABLE.**

ALTER TABLE DEPT MODIFY(DEPT\_NAME VARCHAR2(15) CONSTRAINT DNAME NOT NULL);



ALTER TABLE DEPT ADD CONSTRAINT CON\_DEPT\_NO PRIMARY KEY(DEPT\_NO);



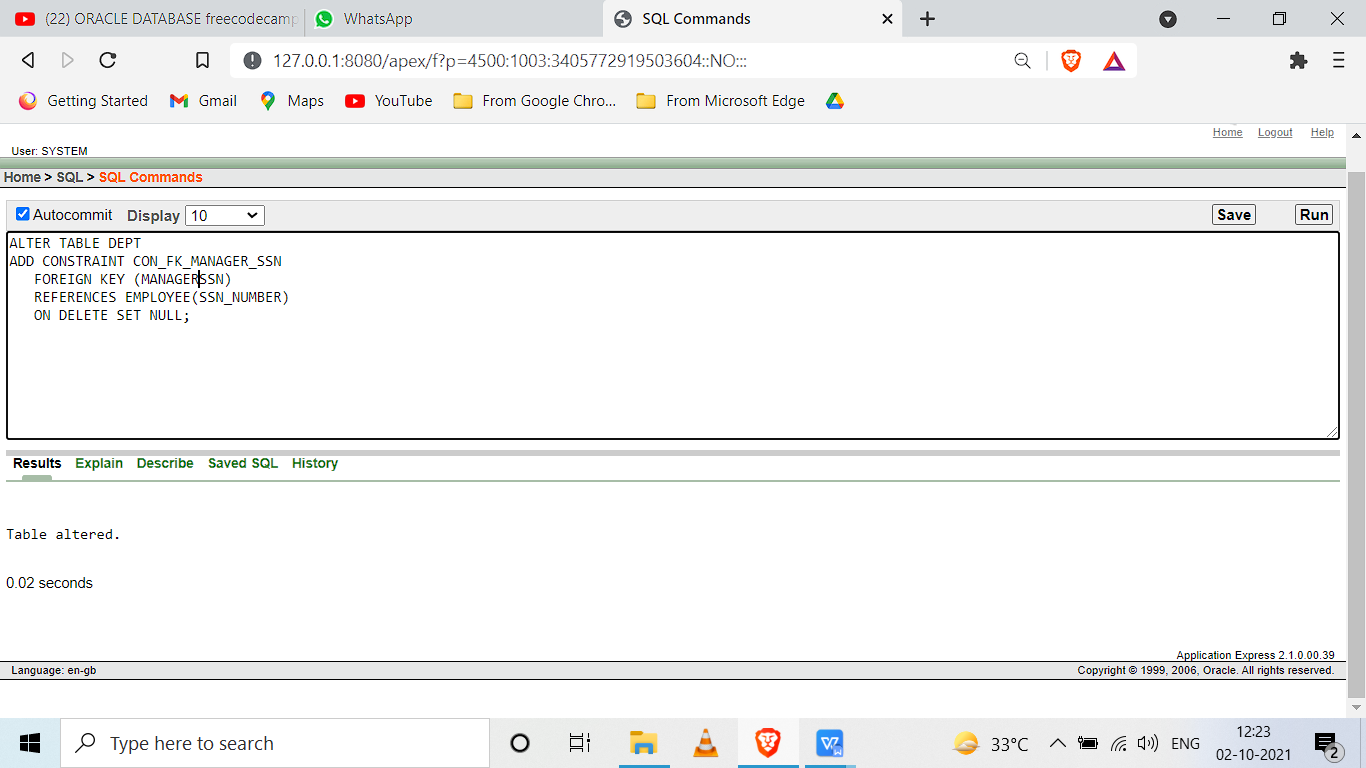
ALTER TABLE DEPT

ADD CONSTRAINT CON\_FK\_MANAGER\_SSN

FOREIGN KEY (MANAGERSSN)

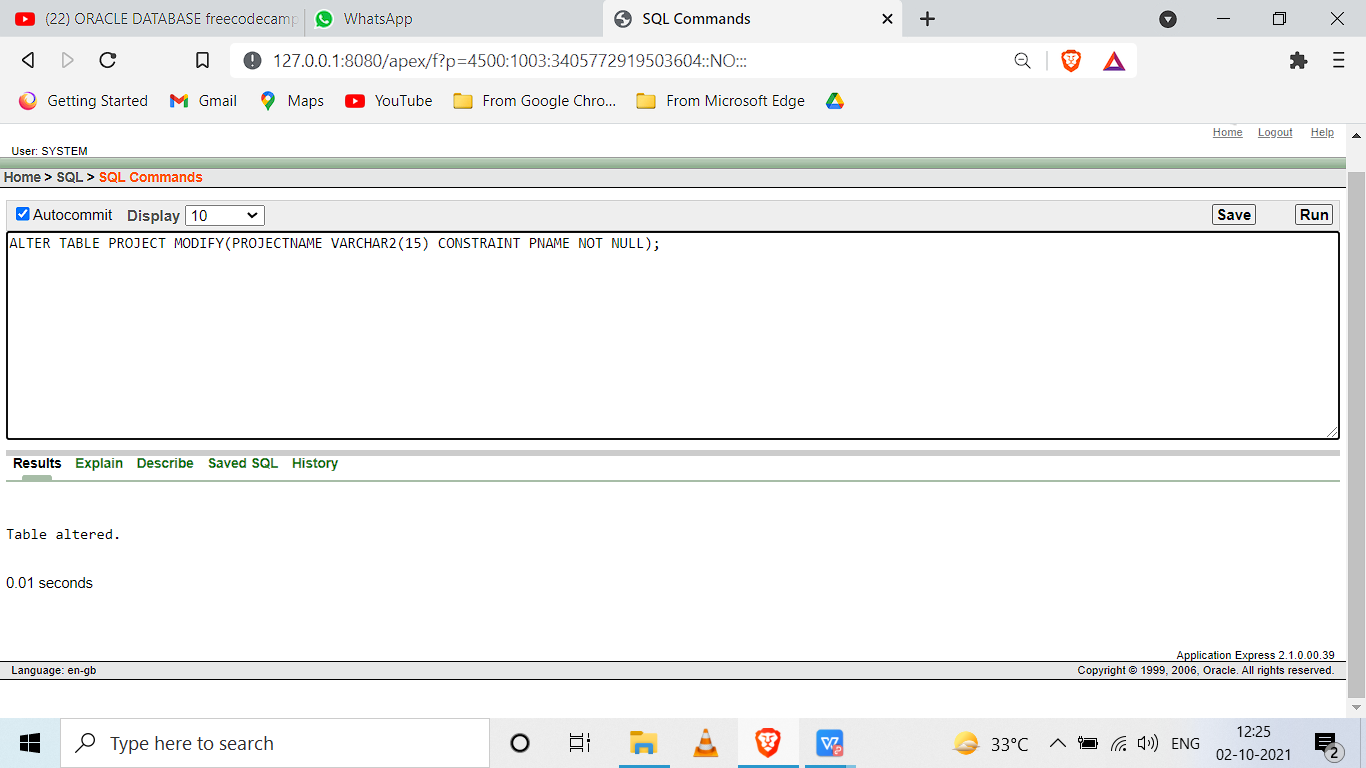
REFERENCES EMPLOYEE(SSN\_NUMBER)

ON DELETE SET NULL;

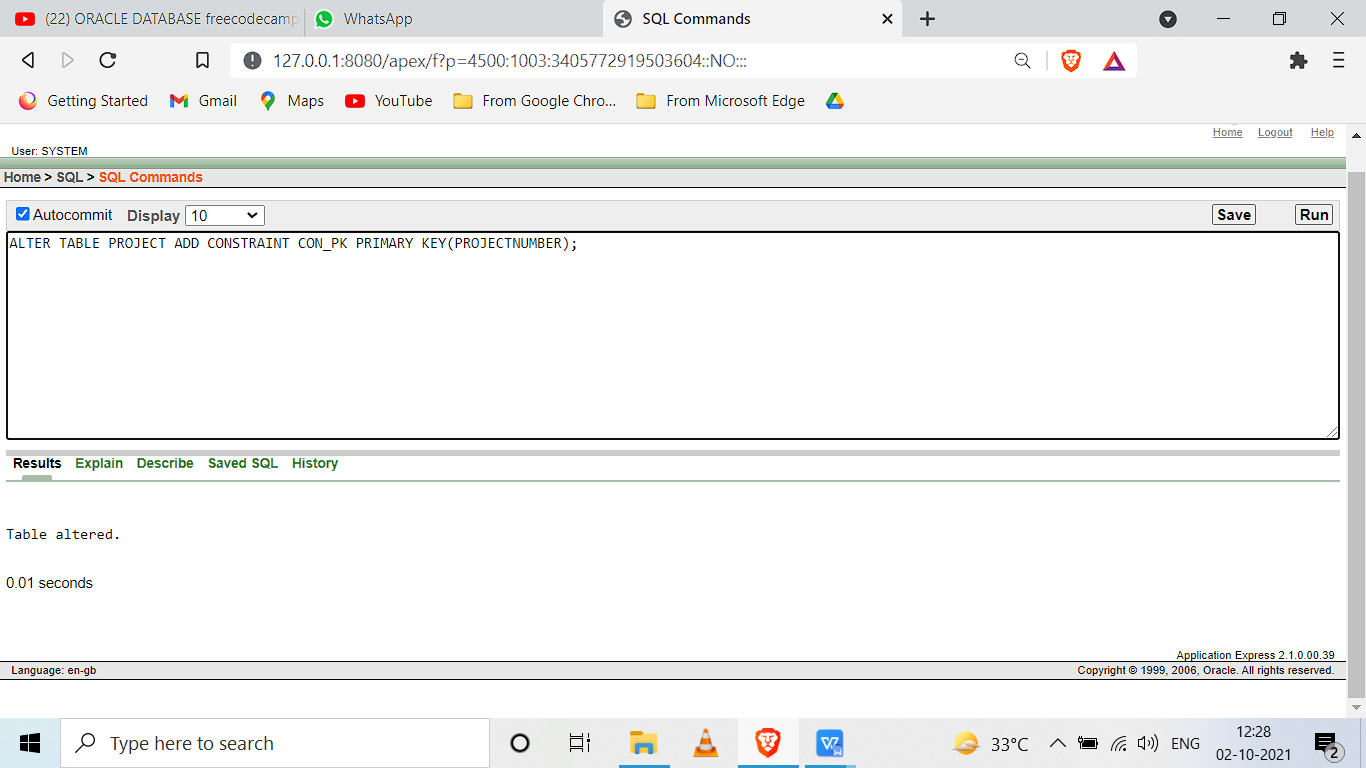


**ADDING CONSTRAINT IN PROJECT TABLE.**

ALTER TABLE PROJECT MODIFY(PROJECTNAME VARCHAR2(15) CONSTRAINT PNAME NOT NULL);



ALTER TABLE PROJECT ADD CONSTRAINT CON\_PK PRIMARY KEY(PROJECTNUMBER);



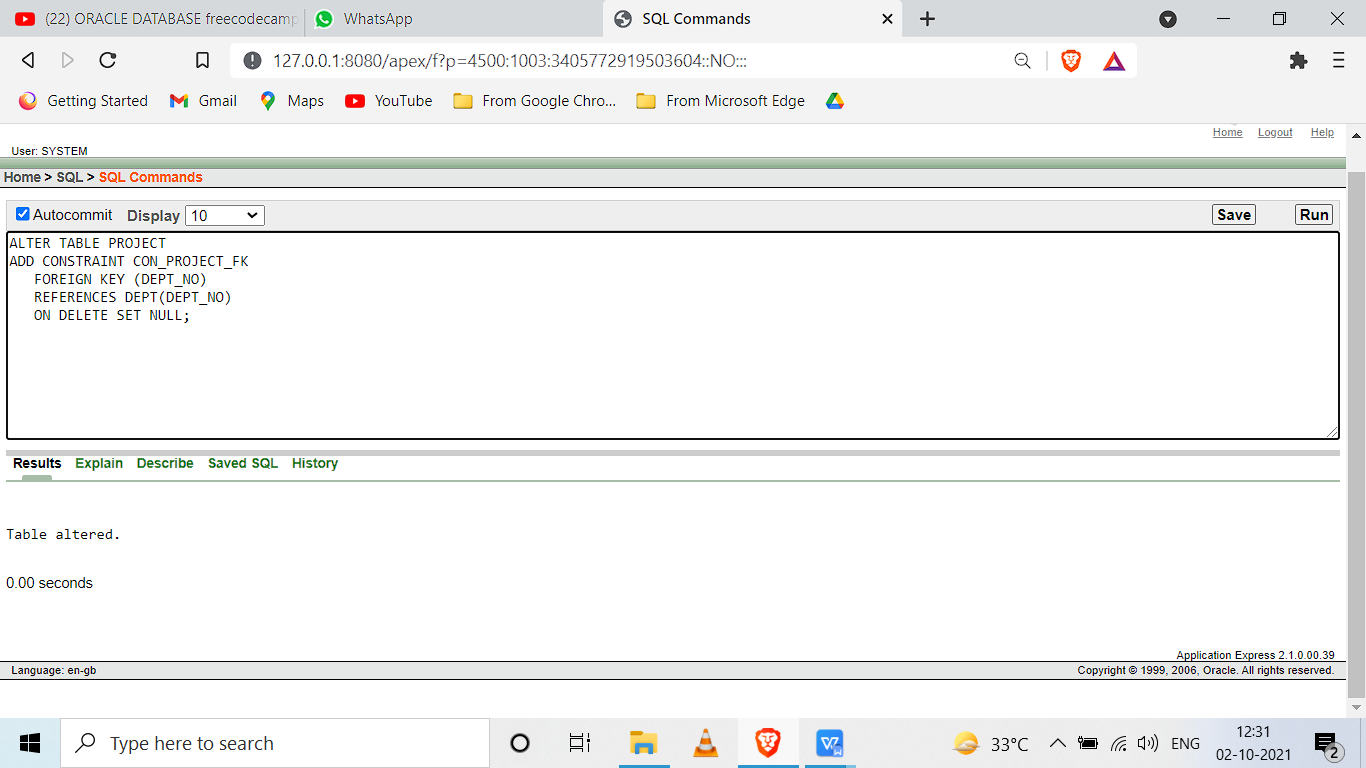
ALTER TABLE PROJECT

ADD CONSTRAINT CON\_PROJECT\_FK

FOREIGN KEY (DEPT\_NO)

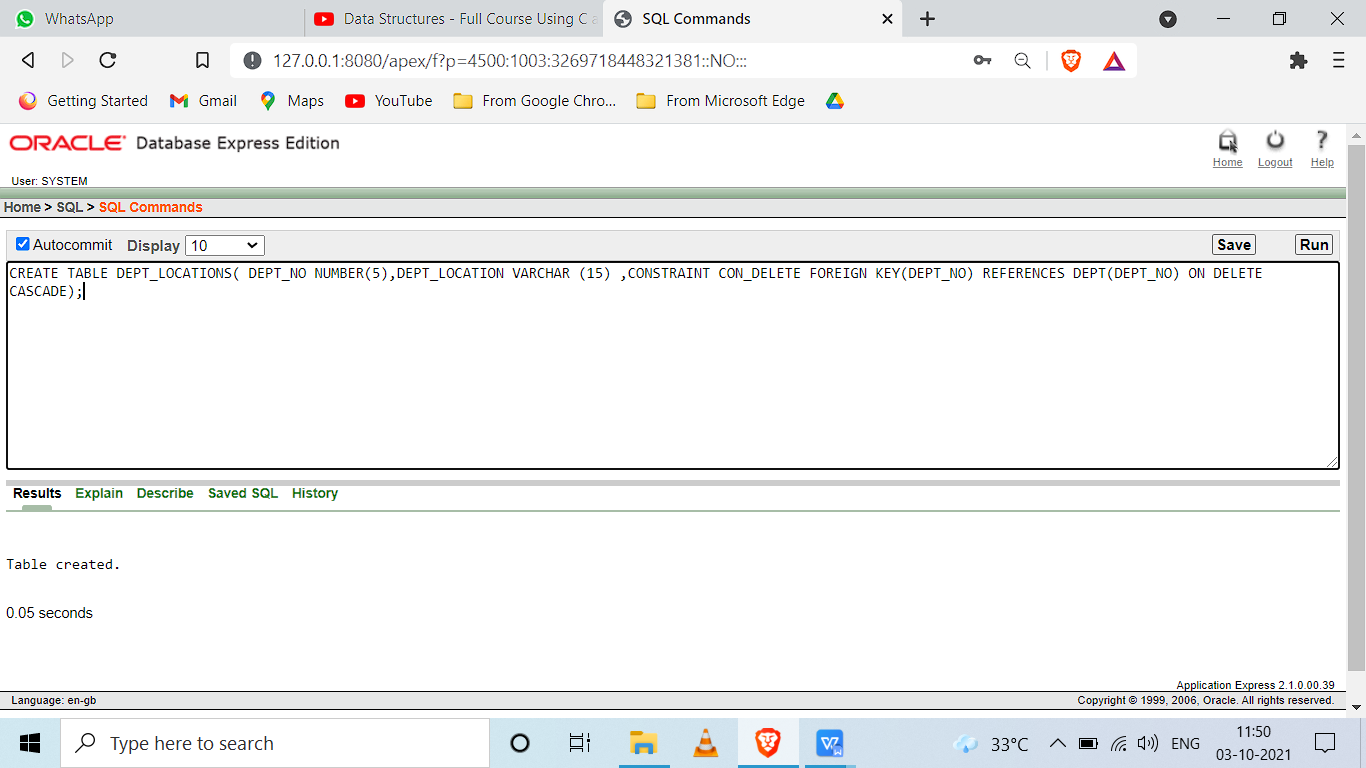
REFERENCES DEPT(DEPT\_NO)

ON DELETE SET NULL;

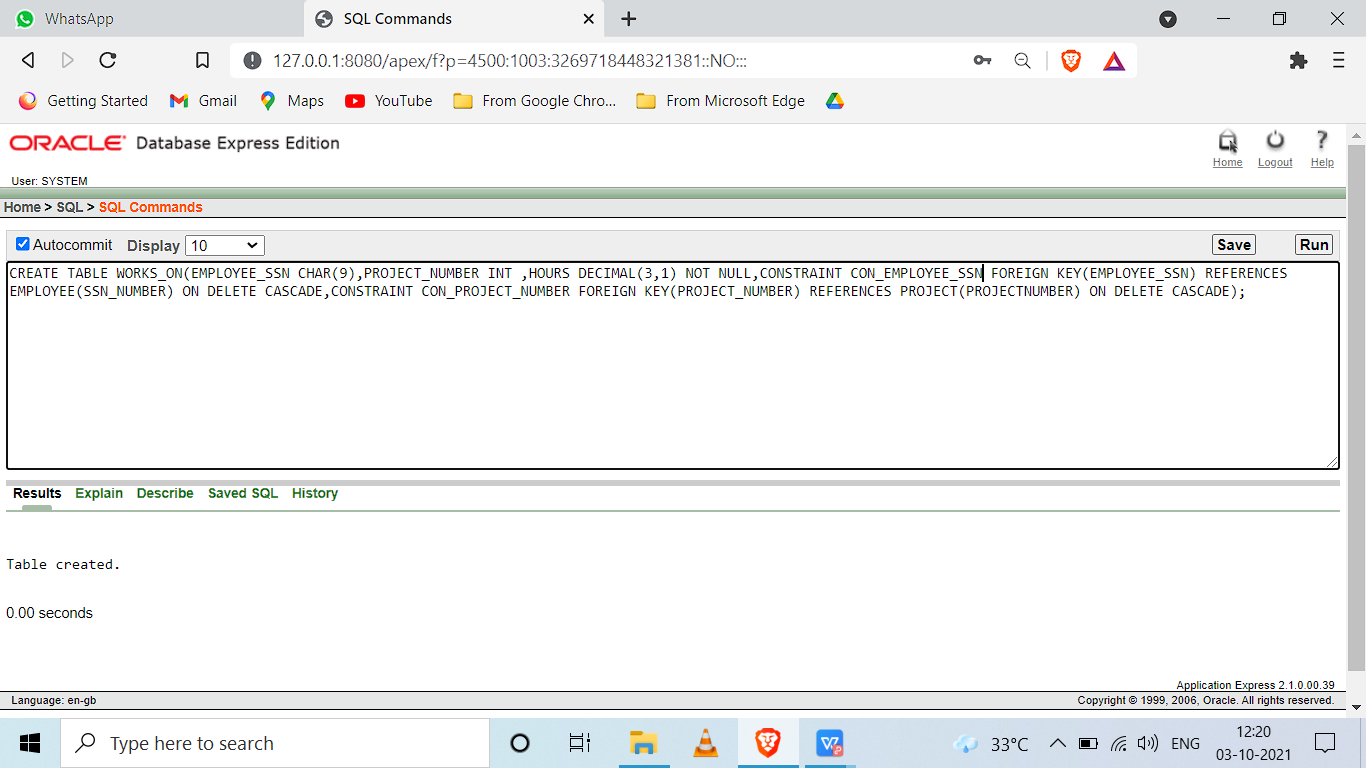


**CREATING NEW TABLES DEPARTMENT\_LOCATIONS,WORKS\_ON, AND DEPENDENT WITH CONSTRAINTS.**

CREATE TABLE DEPT\_LOCATIONS( DEPT\_NO NUMBER(5),DEPT\_LOCATION VARCHAR (15) ,CONSTRAINT CON\_DELETE FOREIGN KEY(DEPT\_NO) REFERENCES DEPT(DEPT\_NO) ON DELETE CASCADE);

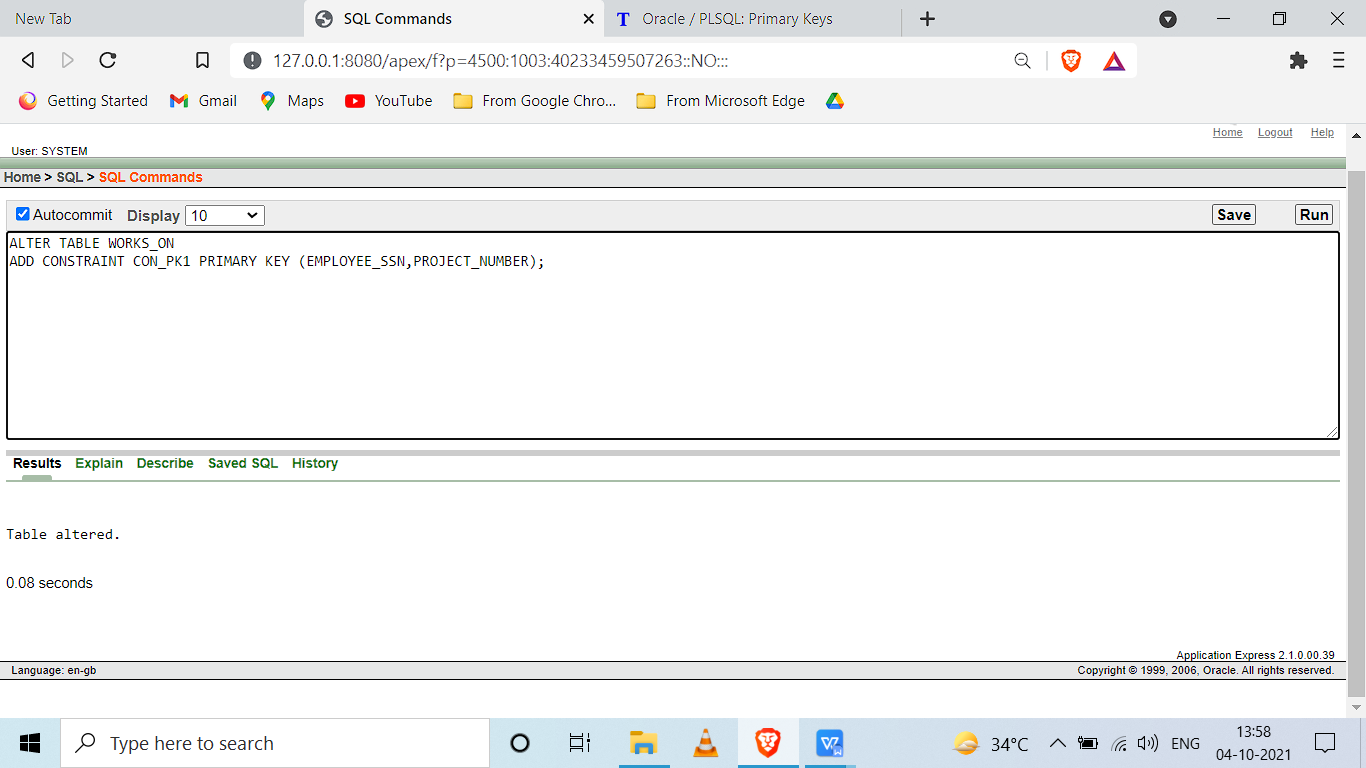


CREATE TABLE WORKS\_ON(EMPLOYEE\_SSN CHAR(9),PROJECT\_NUMBER INT ,HOURS DECIMAL(3,1) NOT NULL,CONSTRAINT CON\_EMPLOYEE\_SSN FOREIGN KEY(EMPLOYEE\_SSN) REFERENCES EMPLOYEE(SSN\_NUMBER) ON DELETE CASCADE,CONSTRAINT CON\_PROJECT\_NUMBER FOREIGN KEY(PROJECT\_NUMBER) REFERENCES PROJECT(PROJECTNUMBER) ON DELETE CASCADE);

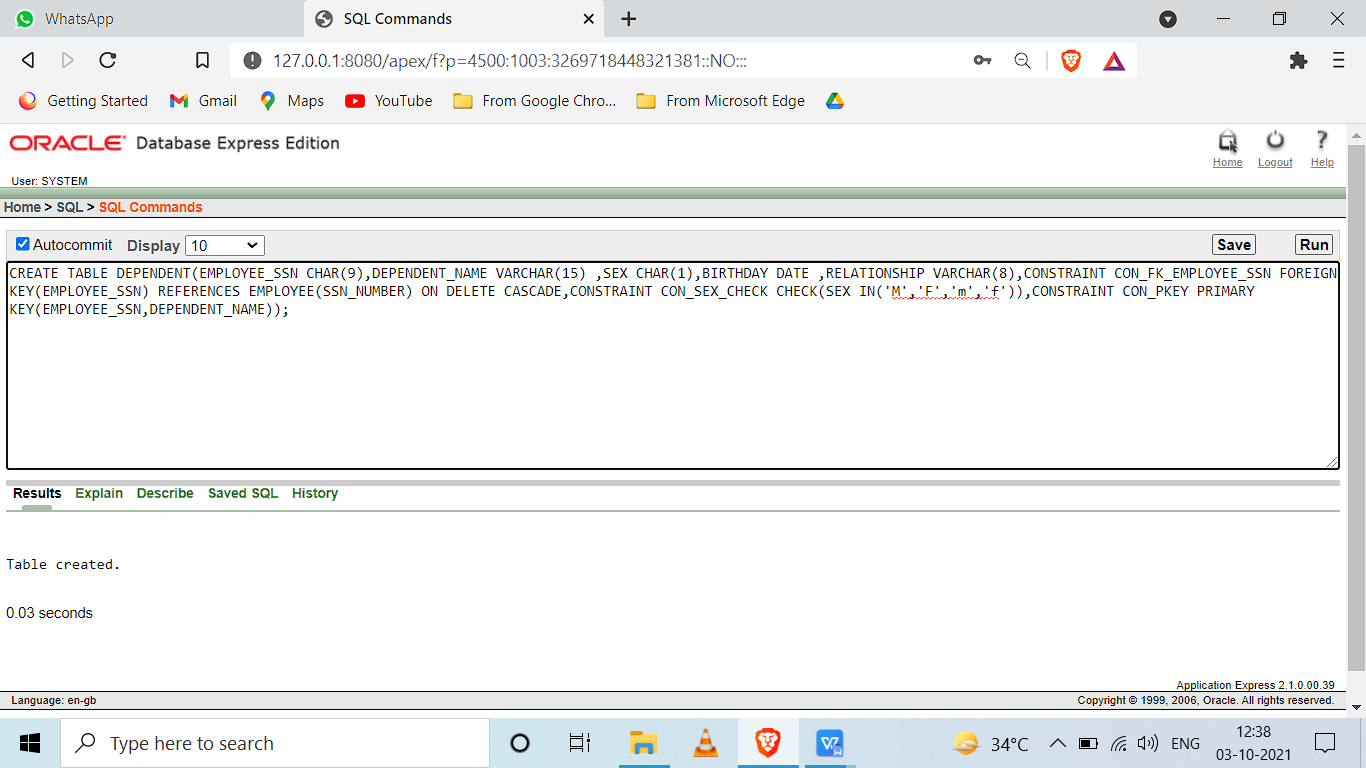


ALTER TABLE WORKS\_ON

ADD CONSTRAINT CON\_PK1 PRIMARY KEY (EMPLOYEE\_SSN,PROJECT\_NUMBER);



CREATE TABLE DEPENDENT(EMPLOYEE\_SSN CHAR(9),DEPENDENT\_NAME VARCHAR(15) ,SEX CHAR(1),BIRTHDAY DATE ,RELATIONSHIP VARCHAR(8),CONSTRAINT CON\_FK\_EMPLOYEE\_SSN FOREIGN KEY(EMPLOYEE\_SSN) REFERENCES EMPLOYEE(SSN\_NUMBER) ON DELETE CASCADE,CONSTRAINT CON\_SEX\_CHECK CHECK(SEX IN('M','F','m','f')),CONSTRAINT CON\_PKEY PRIMARY KEY(EMPLOYEE\_SSN,DEPENDENT\_NAME));



INSERTING DATA INTO DEPARTMENT LOCATIONS TABLE

INSERT INTO DEPT\_LOCATIONS VALUES(1,'HOUSTON');

INSERT INTO DEPT\_LOCATIONS VALUES(1,'CHICAGO');

INSERT INTO DEPT\_LOCATIONS VALUES(2,'NEW YORK');

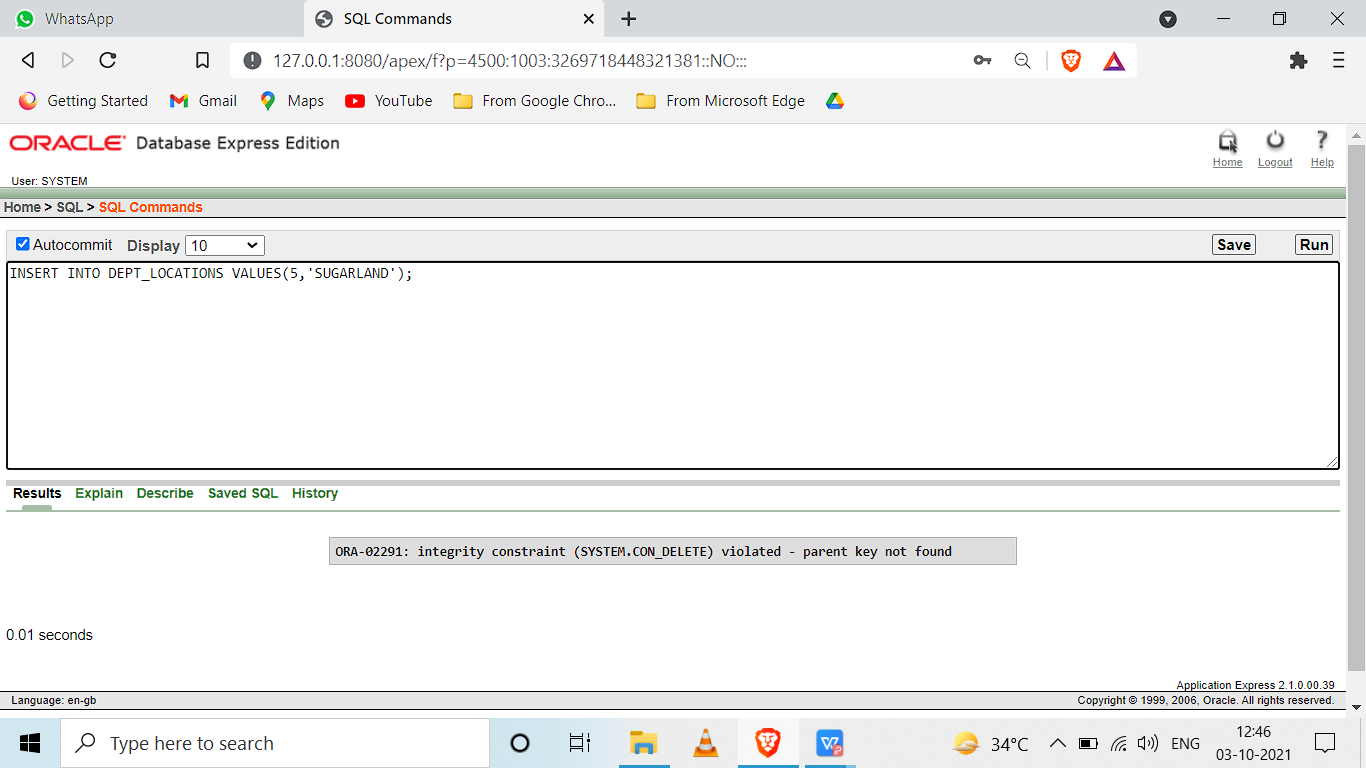
INSERT INTO DEPT\_LOCATIONS VALUES(2,'SAN FRANCISCO');

INSERT INTO DEPT\_LOCATIONS VALUES(3,'SALT LAKE CITY');

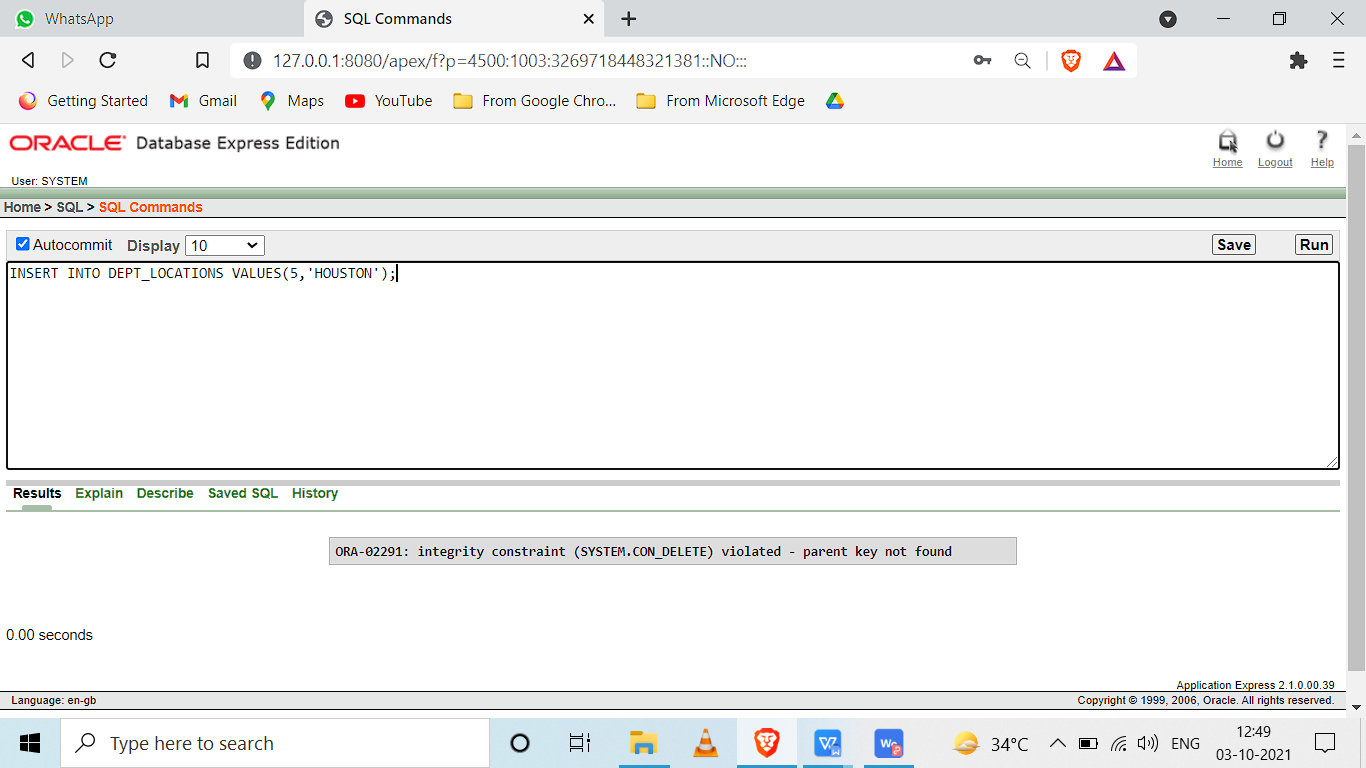
INSERT INTO DEPT\_LOCATIONS VALUES(4,'STAFFORD');

INSERT INTO DEPT\_LOCATIONS VALUES(4,'BELLAIRE');

INSERT INTO DEPT\_LOCATIONS VALUES(5,'SUGARLAND');

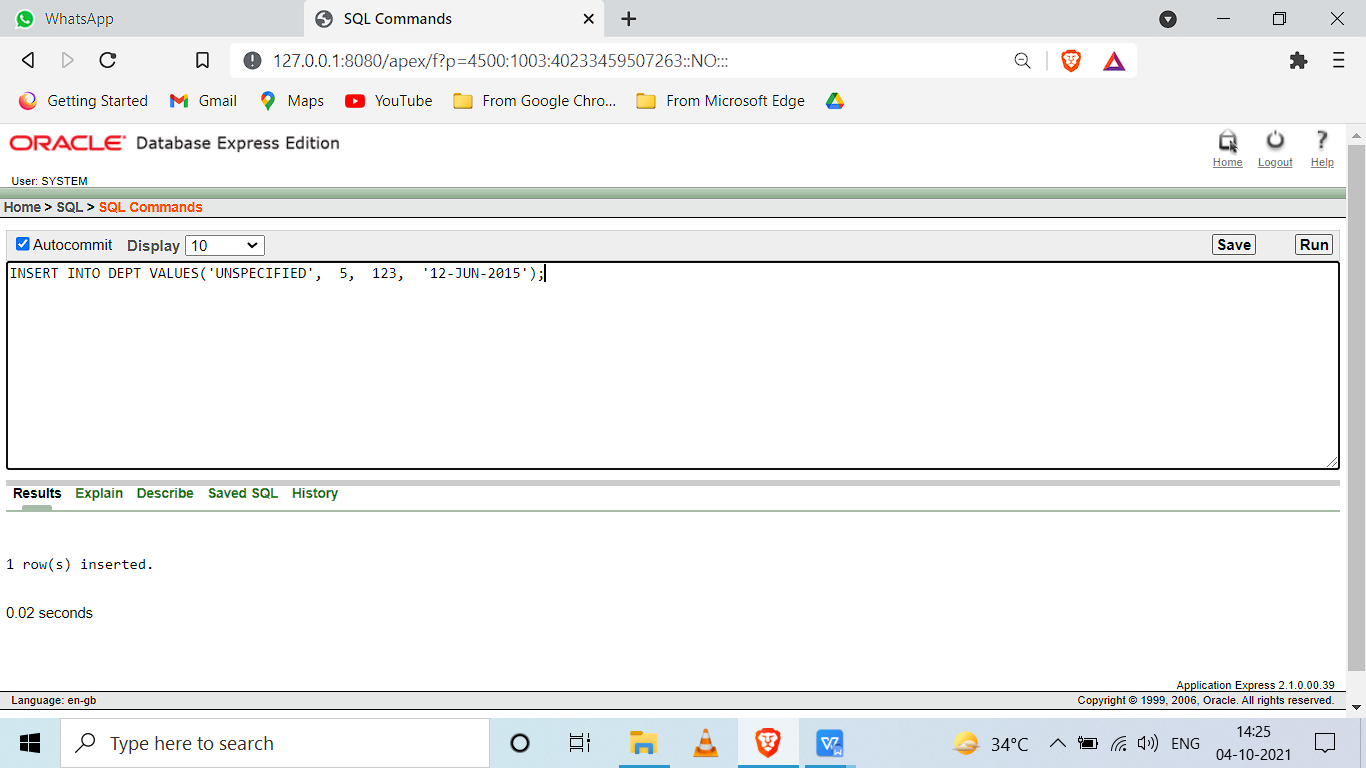


INSERT INTO DEPT\_LOCATIONS VALUES(5,'HOUSTON');



TO RESOLVE THIS PROBLEM WE NEED TO ADD DUMMY DATA WITH DEPT NO=5 IN DEPT TABLE.

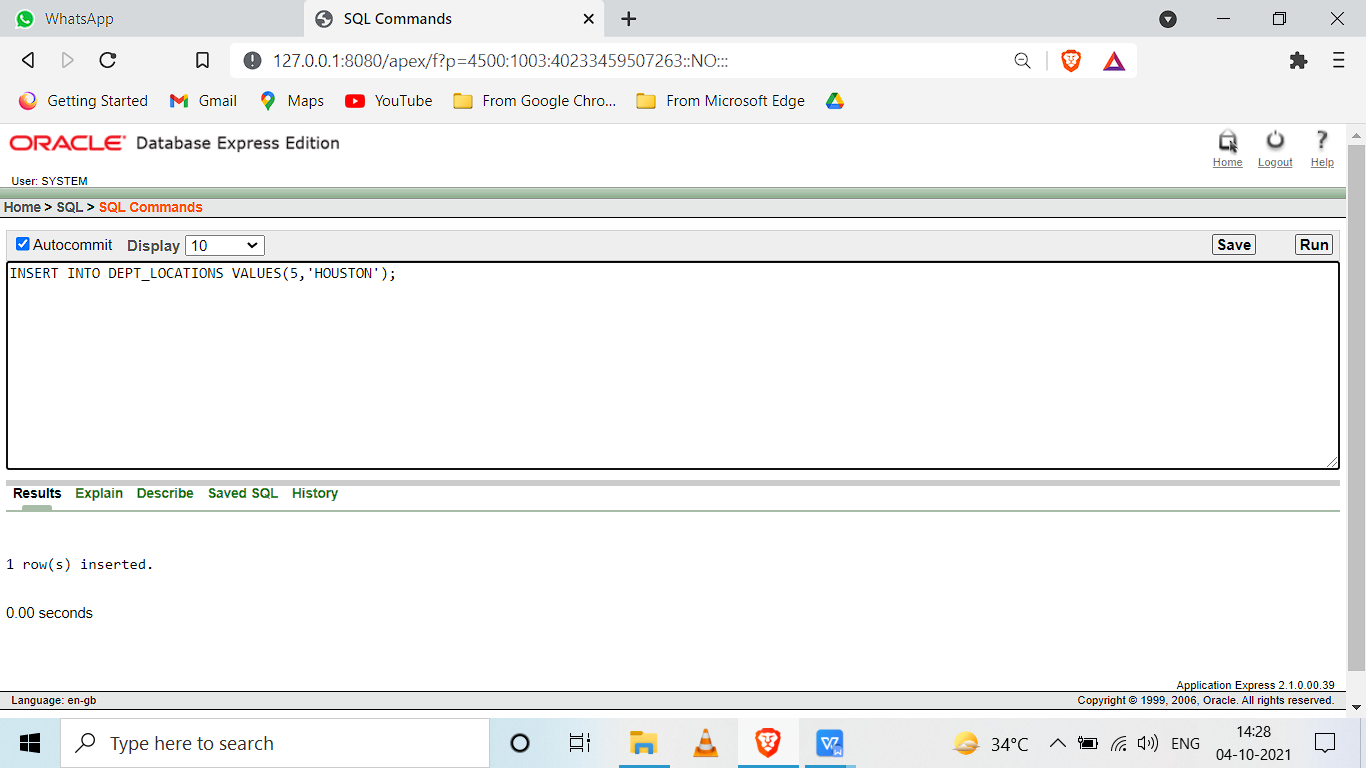
INSERT INTO DEPT VALUES('UNSPECIFIED', 5, 123, '12-JUN-2015');

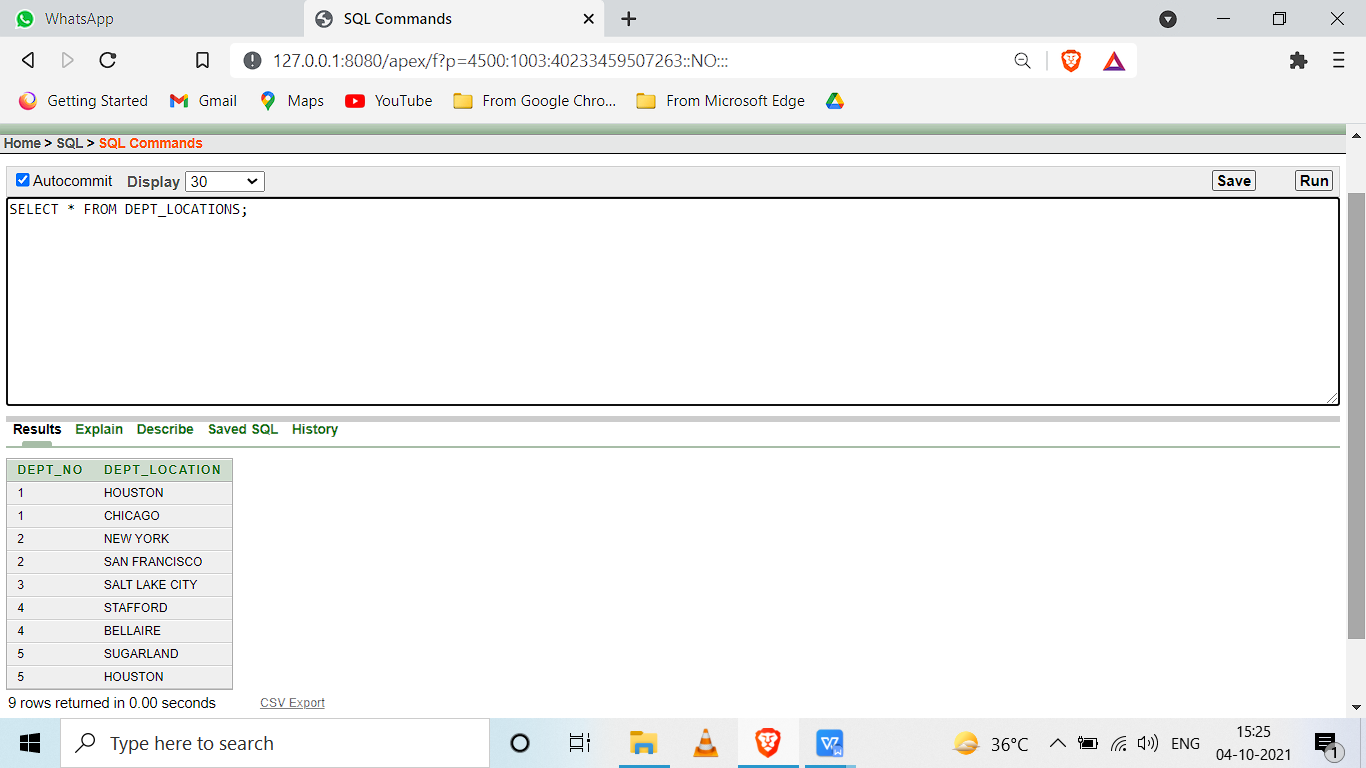


INSERT INTO DEPT\_LOCATIONS VALUES(5,'SUGARLAND');



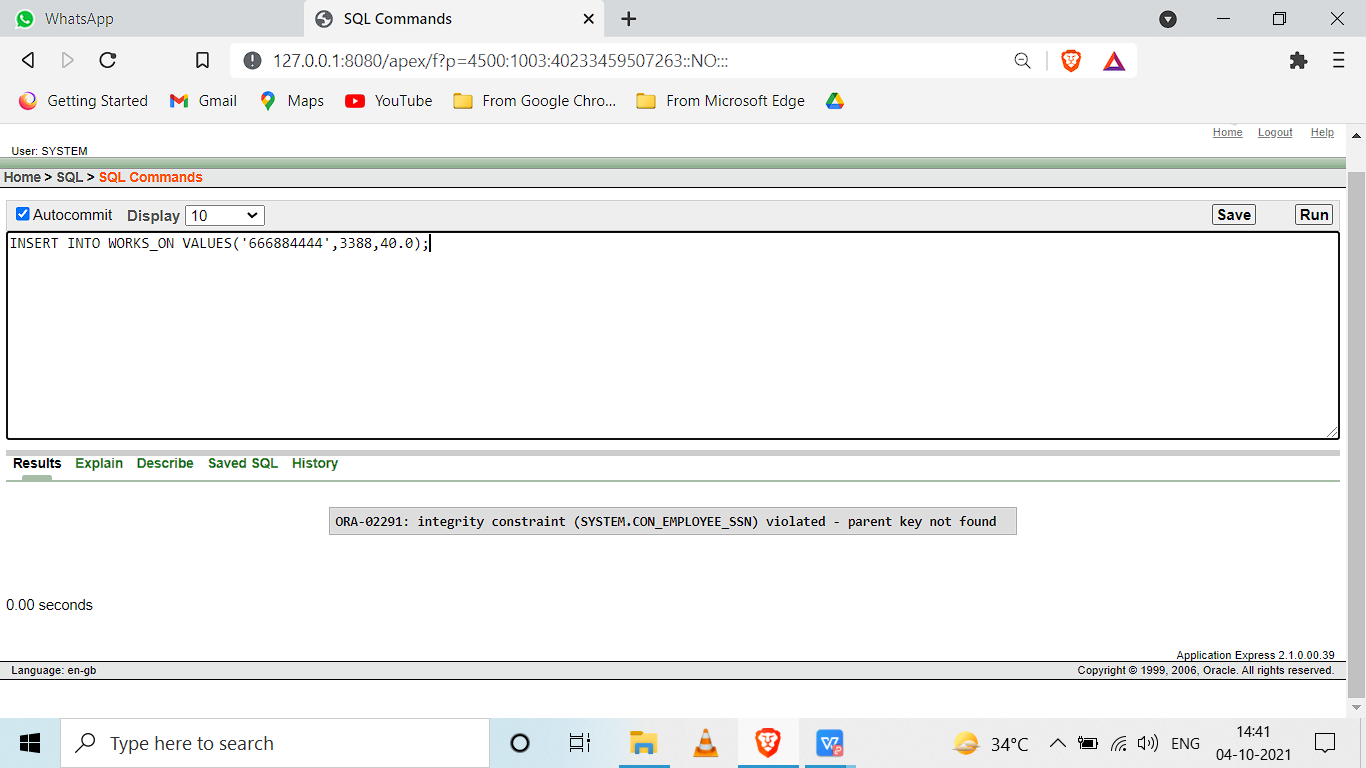
INSERT INTO DEPT\_LOCATIONS VALUES(5,'HOUSTON');





INSERTING DATA INTO WORKS\_ON TABLE

INSERT INTO WORKS\_ON VALUES('666884444',3388,40.0);



ADDING DUMMY DATA TO RESOLVE INTEGRITY CONSTRAINTS.

INSERT INTO EMPLOYEE VALUES('ALBERT', NULL, 'EINSTEIN',123456789,'09-JUN-1969', 'CHENNAI', 'M', 80000, NULL , 4);

INSERT INTO EMPLOYEE VALUES('NIKOLA', NULL, 'TESLA',666884444,'09-JUN-1970', 'CHENNAI', 'M', 90000, NULL , 4);

INSERT INTO EMPLOYEE VALUES('ELON', NULL, 'MUSK',453453453,'09-JUN-1970', 'CHENNAI', 'M', 90000, NULL , 4);

INSERT INTO EMPLOYEE VALUES('JEFF', NULL, 'BEZOS',333445555,'09-JUN-1971', 'CHENNAI', 'M', 10000, NULL , 4);

INSERT INTO EMPLOYEE VALUES('STEVE', NULL, 'JOBS',999887777,'09-JUN-1972', 'CHENNAI', 'M', 10000, NULL , 4);

INSERT INTO EMPLOYEE VALUES('BRUCE', NULL, 'WAYNE',543216789,'09-JUN-1973', 'CHENNAI', 'M', 90000, NULL , 4);

INSERT INTO EMPLOYEE VALUES('TONY', NULL, 'STARK',554433221,'09-JUN-1974', 'CHENNAI', 'M', 90000, NULL , 4);

ADDING DUMMY DATA TO PROJECT TABLE.

INSERT INTO PROJECT VALUES('ProjectB', 77 , 'HYDERABAD', 1 );

INSERT INTO PROJECT VALUES('ProjectB', 12 , 'HYDERABAD', 1 );

INSERT INTO PROJECT VALUES('ProjectB', 22 , 'HYDERABAD', 1 );

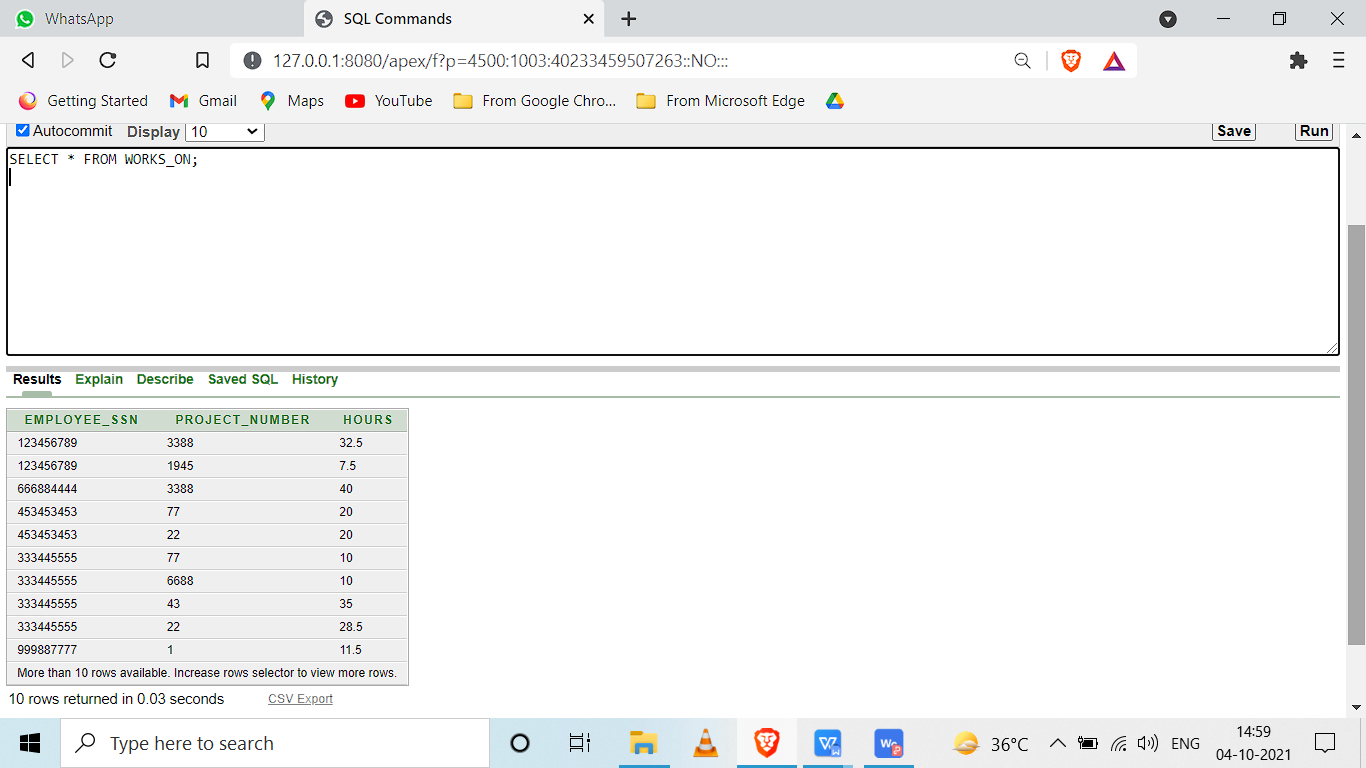
INSERT INTO PROJECT VALUES('ProjectB', 43 , 'HYDERABAD', 1 );

INSERT INTO PROJECT VALUES('ProjectB', 1 , 'HYDERABAD', 1 );

INSERT INTO PROJECT VALUES('ProjectB', 12 , 'HYDERABAD', 1 );

INSERTING DATA INTO WORKS\_ON TABLE.

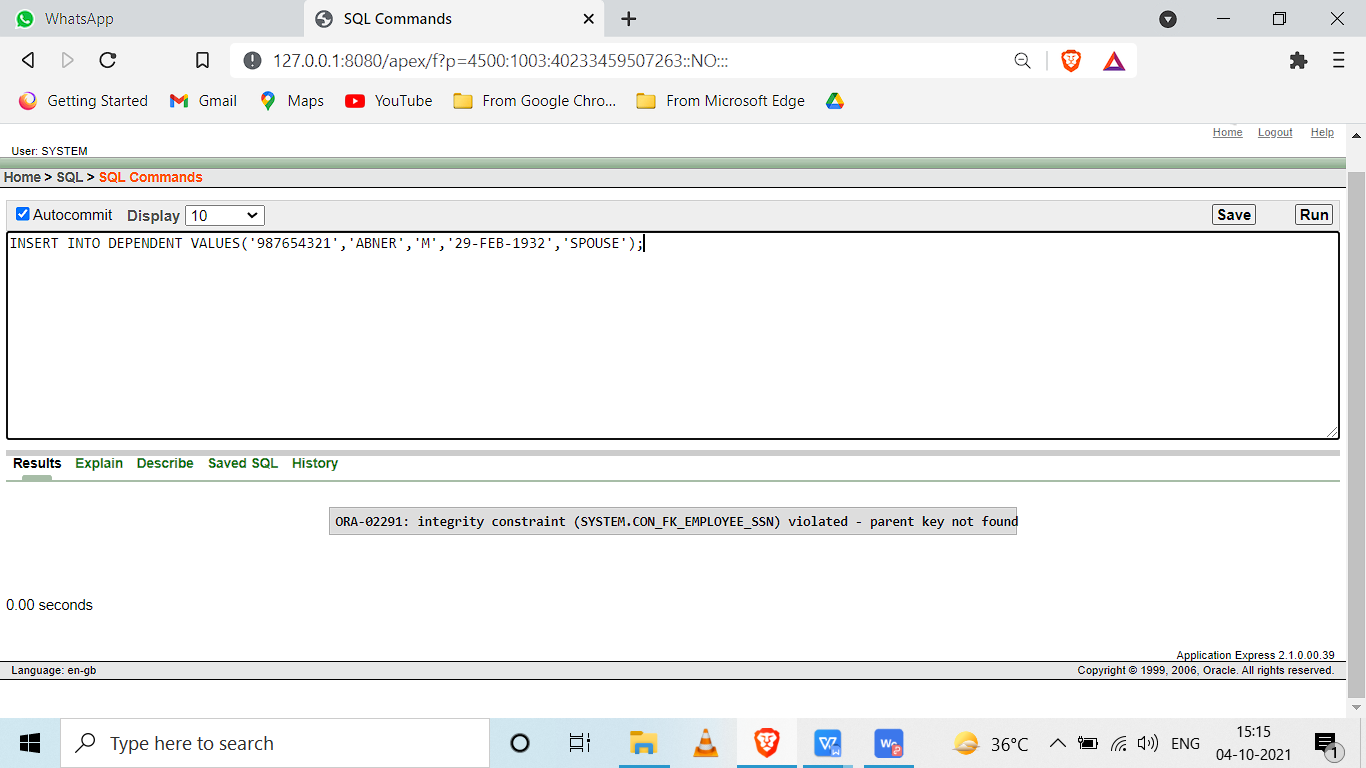
INSERT INTO WORKS\_ON VALUES('123456789', 3388 , 32.5 );



INSERTING DATA INTO DEPENDENT TABLE.

INSERT INTO DEPENDENT VALUES('333445555','ALICE','F','05-APR-1976','DAUGHTER');

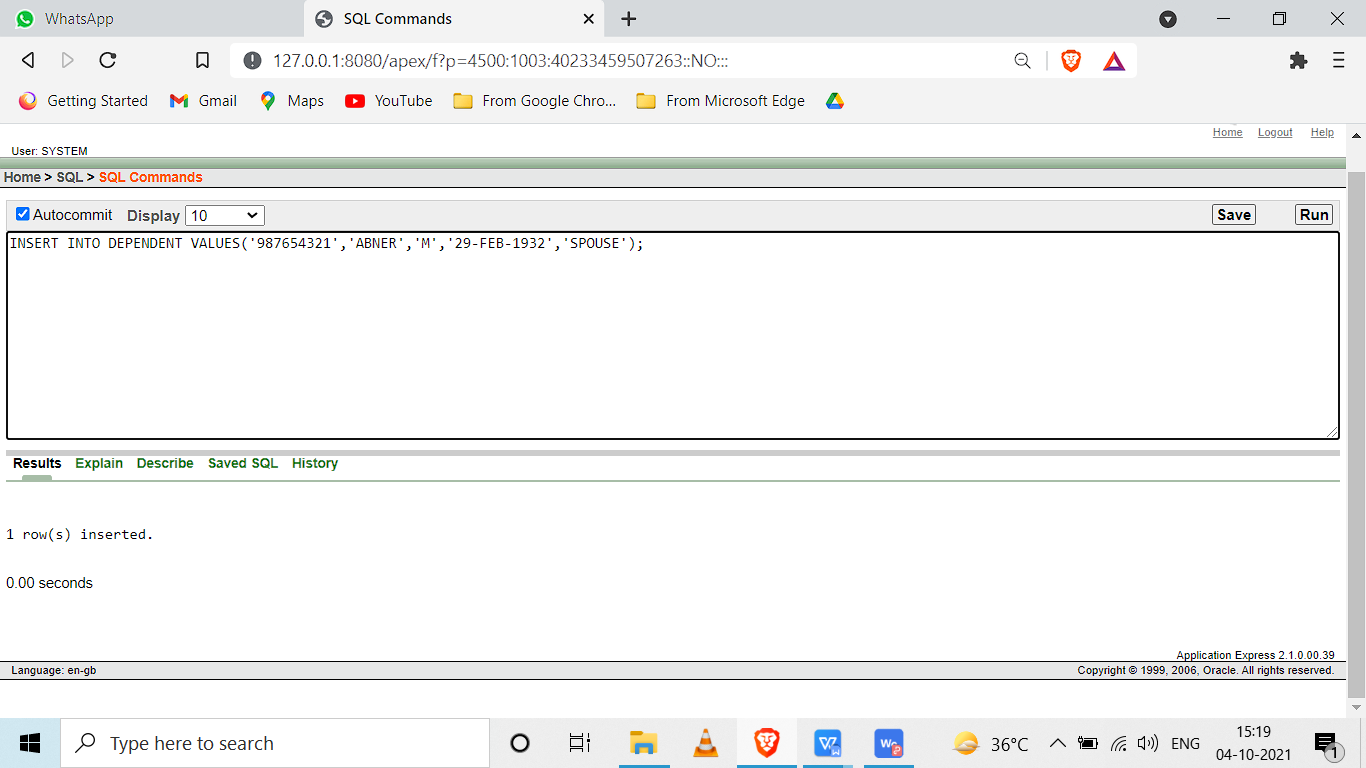
INSERT INTO DEPENDENT VALUES('987654321','ABNER','M','29-FEB-1932','SPOUSE');

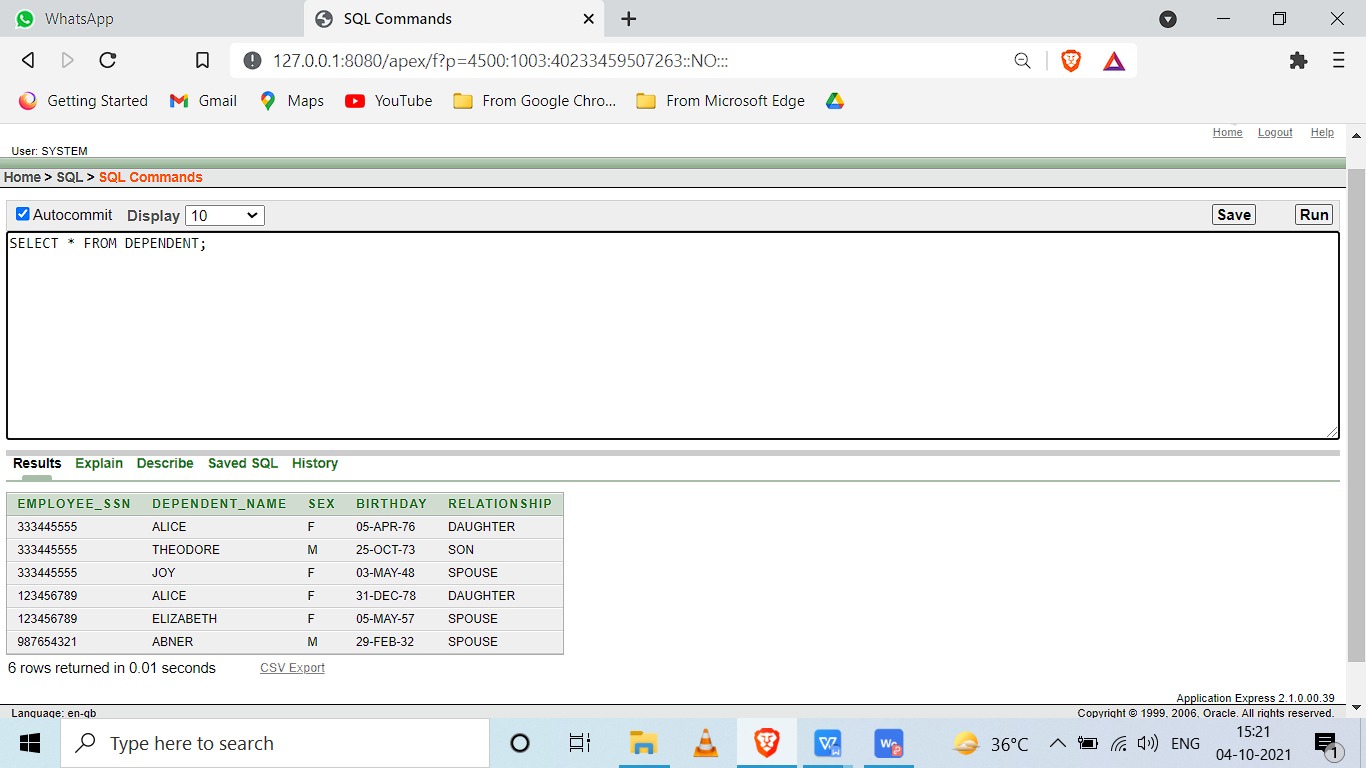


ADDING DUMMY DATA TO EMPLOYEE TABLE

INSERT INTO EMPLOYEE VALUES('CAPTAIN STEVE', NULL, 'ROGERS',987654321,'09-JUN-1902', 'CHENNAI', 'M', 90000, NULL , 4);

INSERT INTO DEPENDENT VALUES('987654321','ABNER','M','29-FEB-1932','SPOUSE');





**Execute the following Query on the Db to display and discuss the integrity constraints**

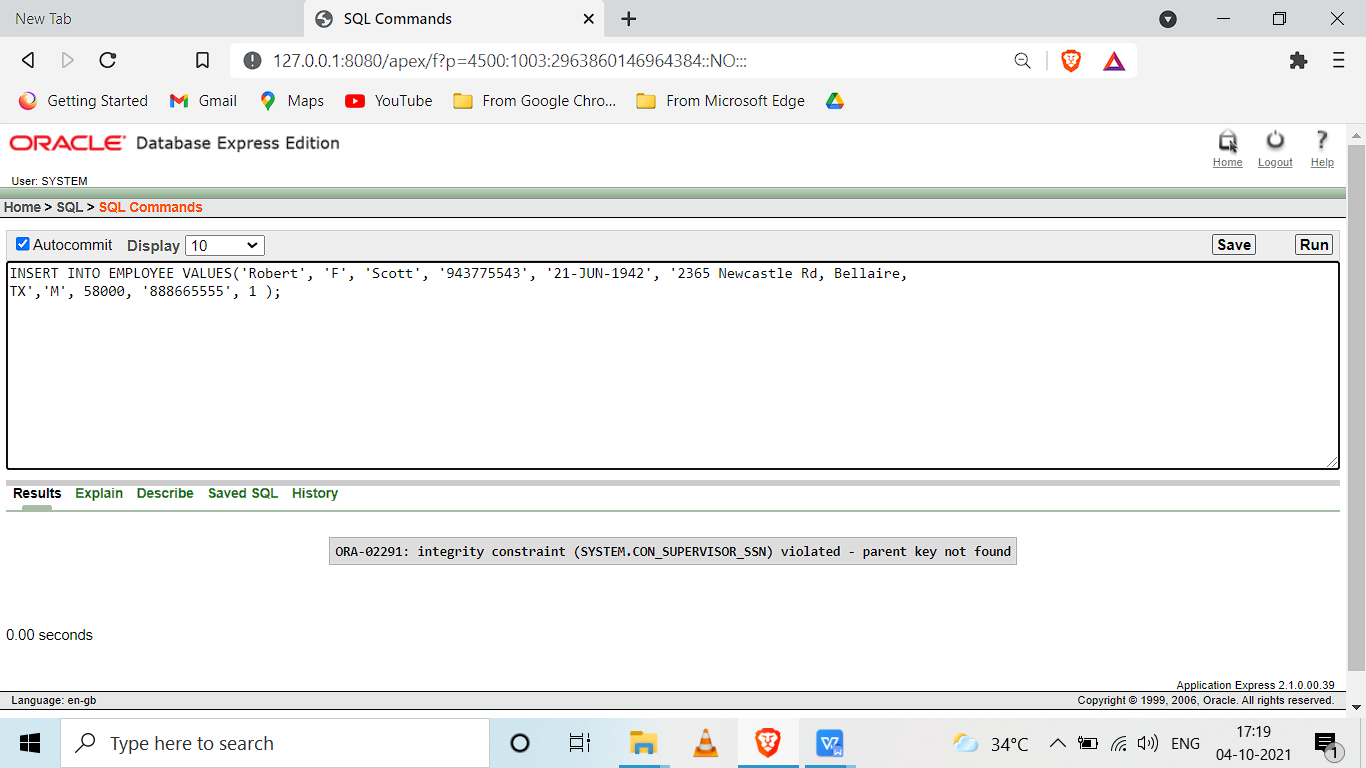
**violated by any of the following operations**

1. Insert ('Robert', 'F', 'Scott', '943775543', '21-JUN-42', '2365 Newcastle Rd, Bellaire,

TX', M, 58000, '888665555', 1 ) into EMPLOYEE.

AS SUPERSSN IS FOREIGN KEY REFERENCING TO SSN

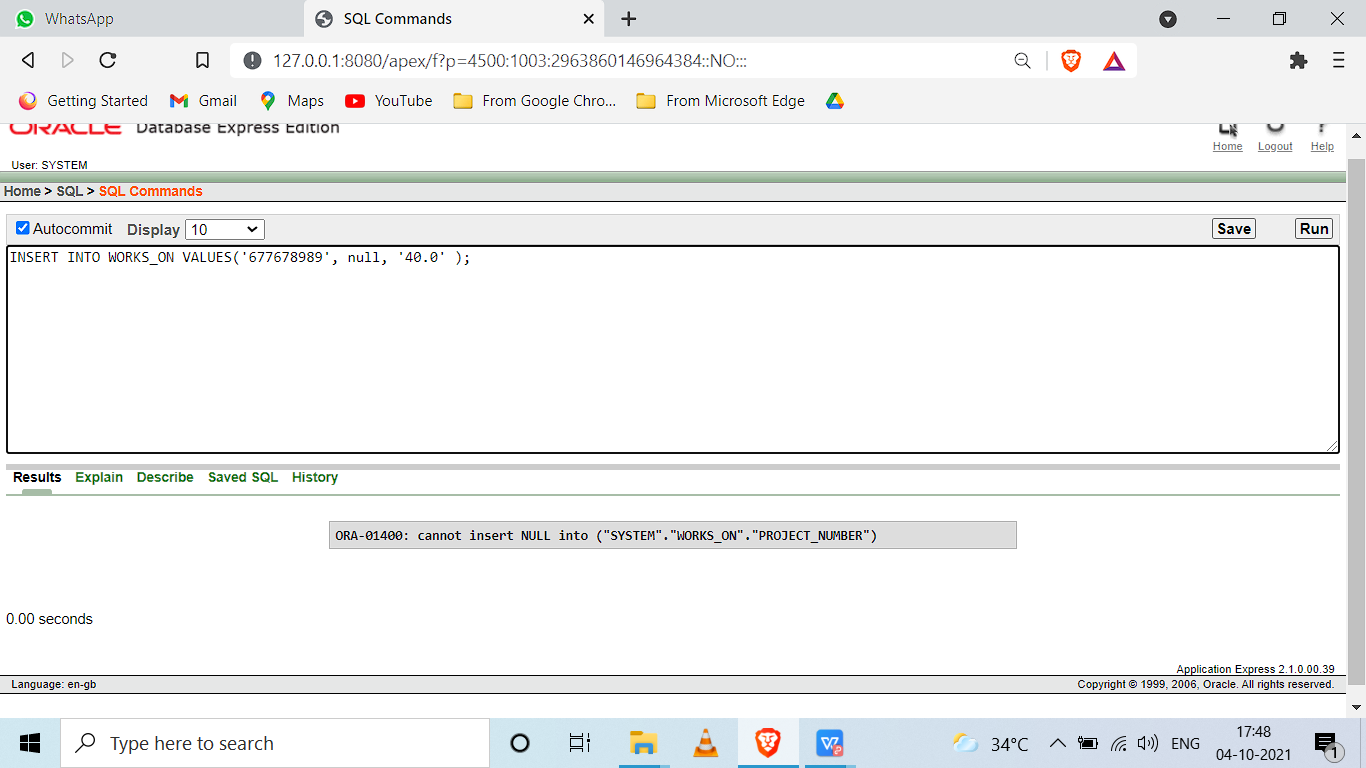
WE DONOT HAVE THE 888665555 IN SSN AS SUPERSSN IS REFERING TO THIS SO WE CANT HAVE 888665555 IN SUPERSSN



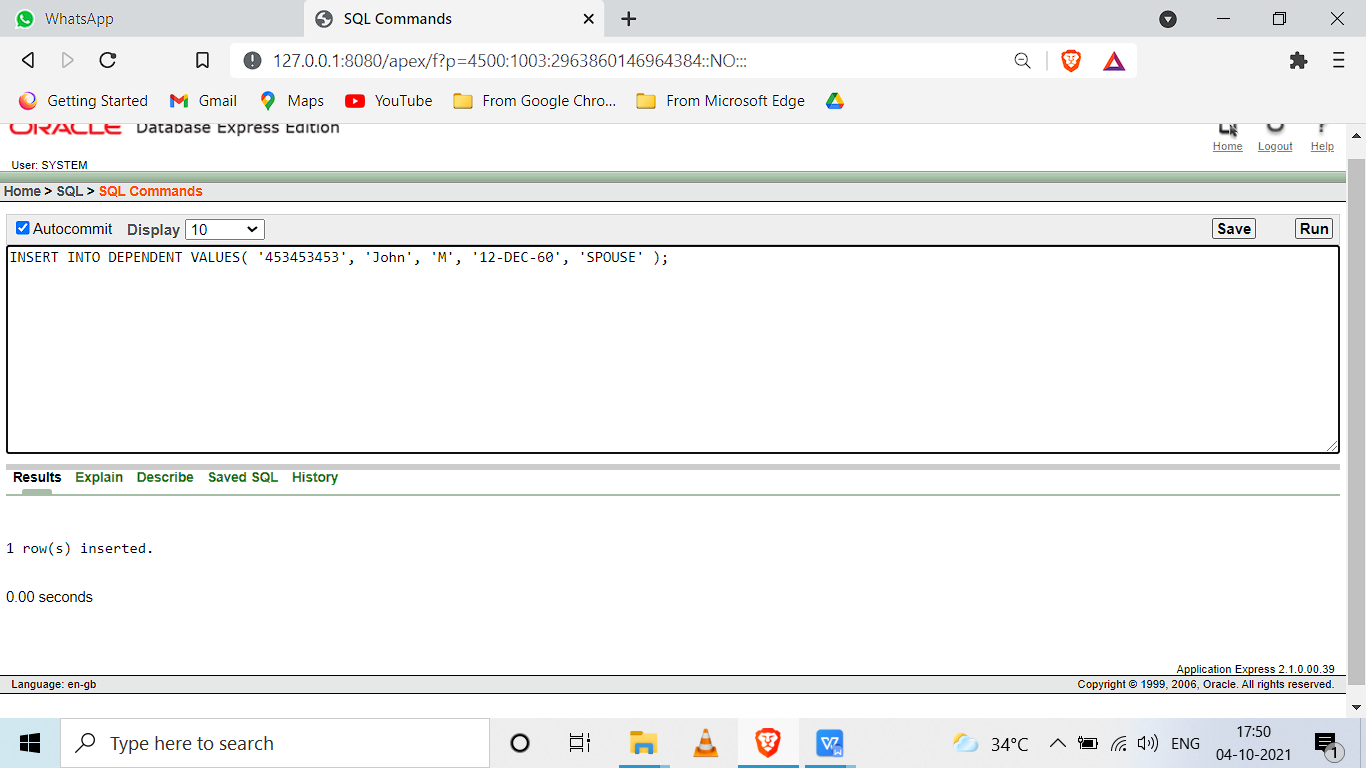
2. Insert ( '677678989', null, '40.0' ) into WORKS\_ON.

PROJECT NUMBER IS PRIMARY KEY AND CANT BE NULL.

EMPLOYEE 677678989 IS NOT PRESENT IN EMPLOYEE(SSN).

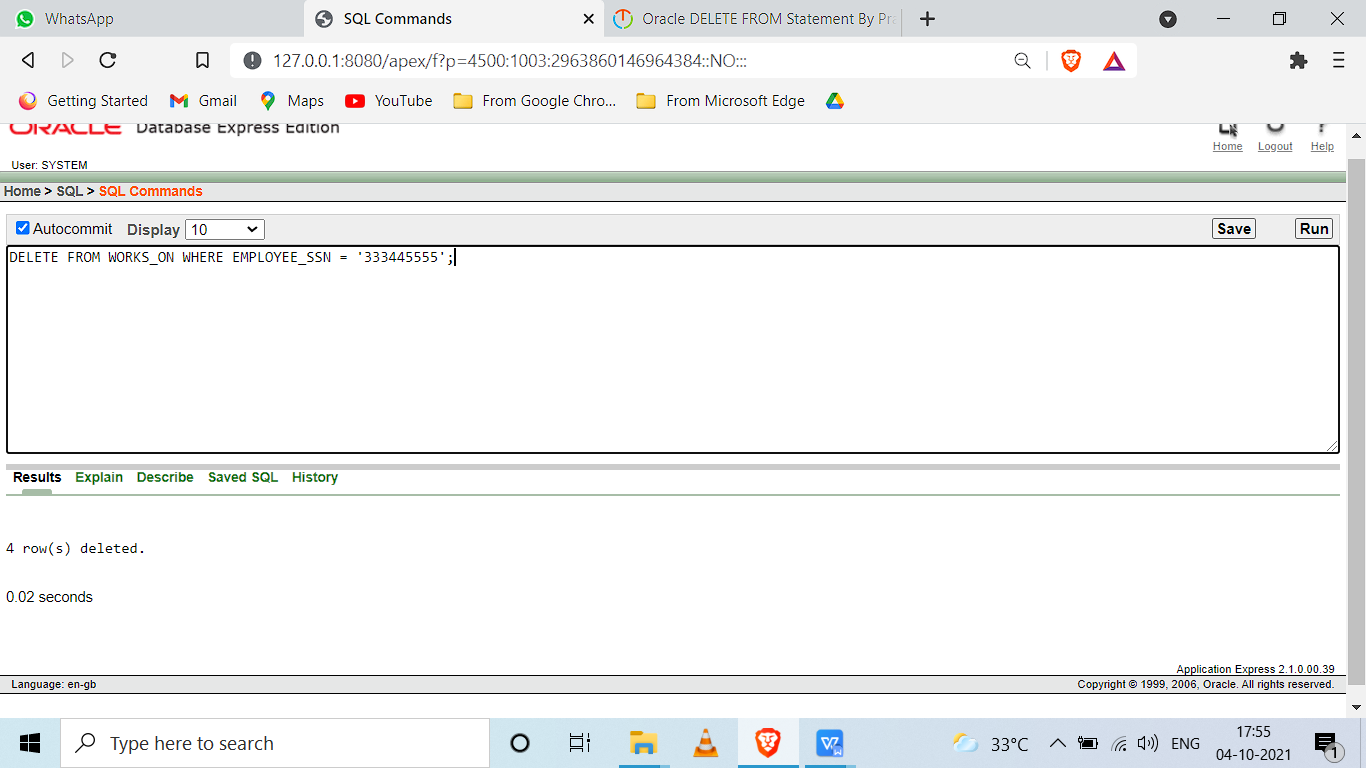


3. Insert ( '453453453', 'John', M, '12-DEC-60', 'SPOUSE' ) into DEPENDENT



1. Delete the WORKS\_ON tuples with ESSN= '333445555'.

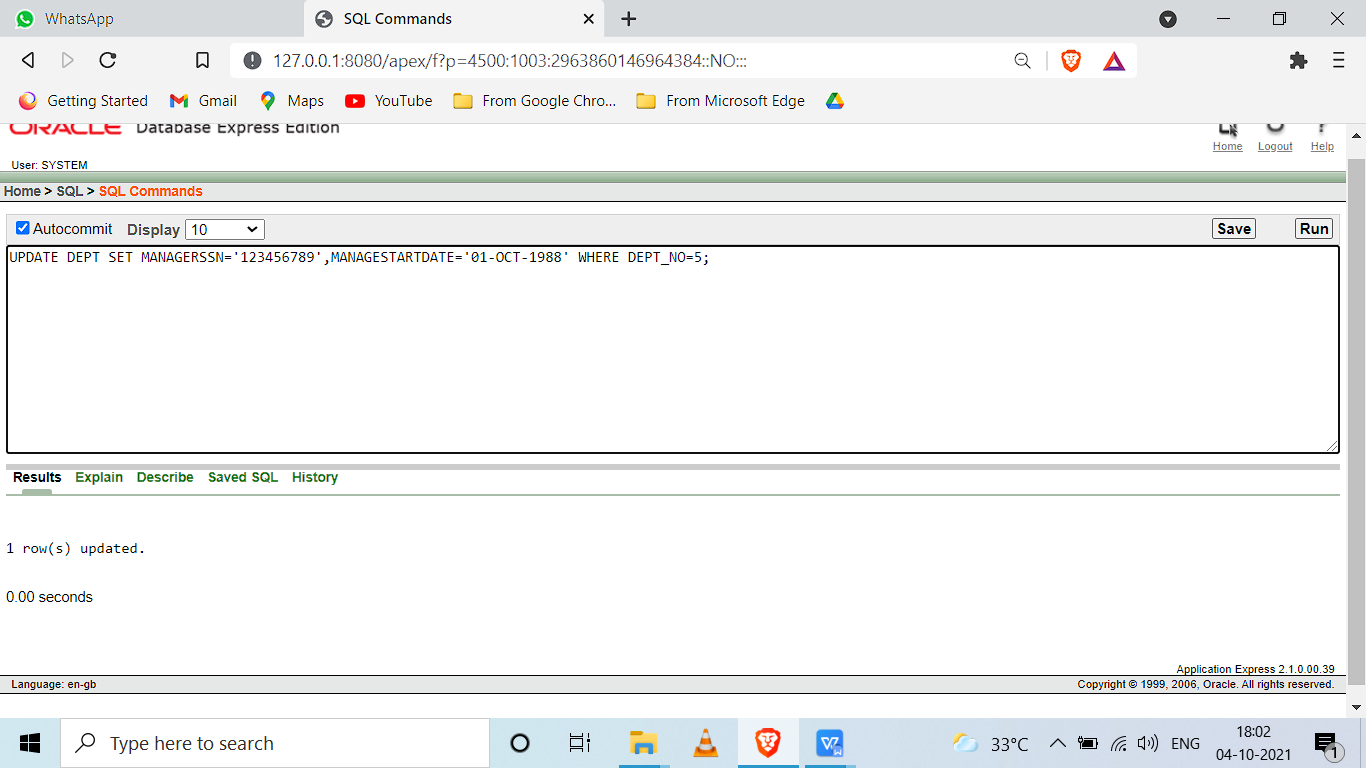
DELETE FROM WORKS\_ON WHERE EMPLOYEE\_SSN = '333445555';



5. Modify the MGRSSN and MGRSTARTDATE of the DEPARTMENT tuple with

DNUMBER=5 to '123456789' and '01-OCT-88', respectively.

UPDATE DEPT SET MANAGERSSN='123456789',MANAGESTARTDATE='01-OCT-1988' WHERE DEPT\_NO=5;



**Alter the tables to**

2. Drop Foreign key defined on SuperSSN and add it using Alter table command.

ALTER TABLE EMPLOYEE

DROP CONSTRAINT CON\_SUPERVISOR\_SSN;

ALTER TABLE EMPLOYEE

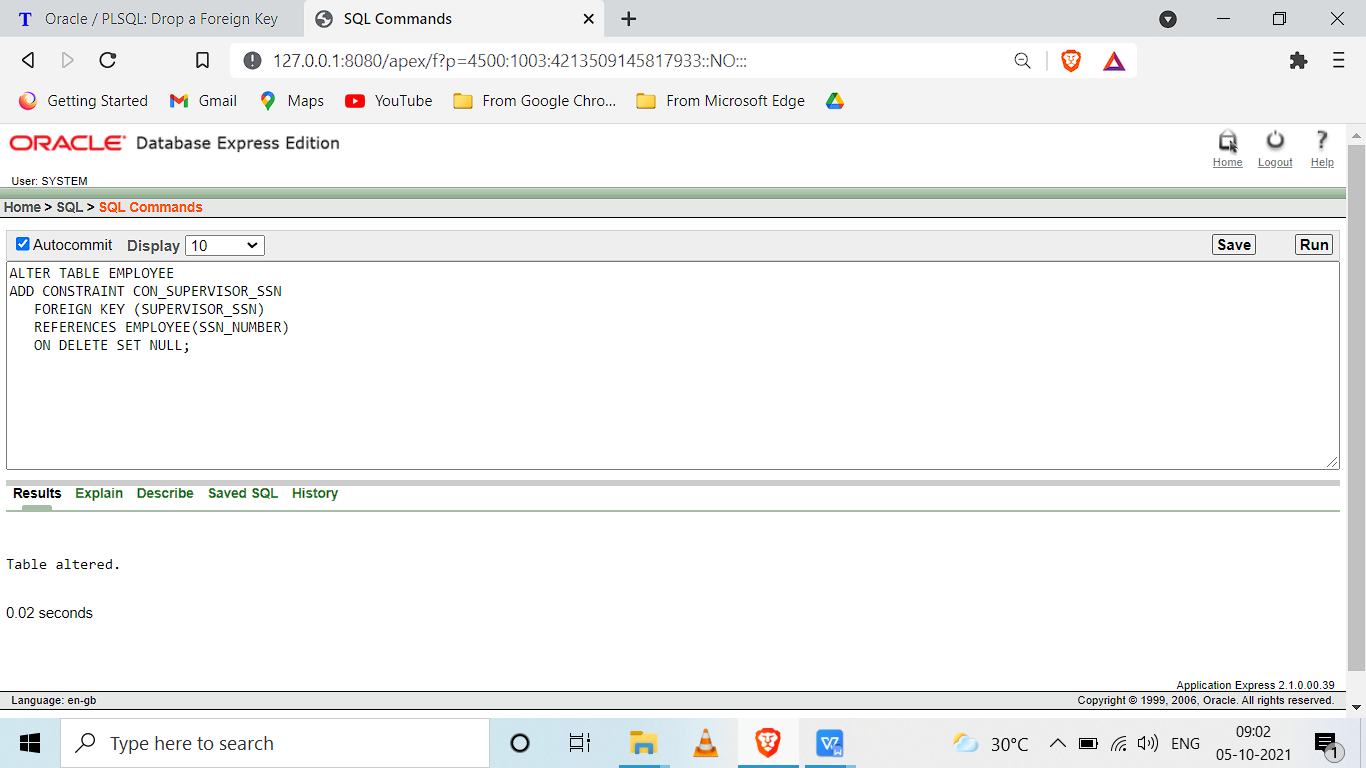
ADD CONSTRAINT CON\_SUPERVISOR\_SSN

FOREIGN KEY (SUPERVISOR\_SSN)

REFERENCES EMPLOYEE(SSN\_NUMBER)

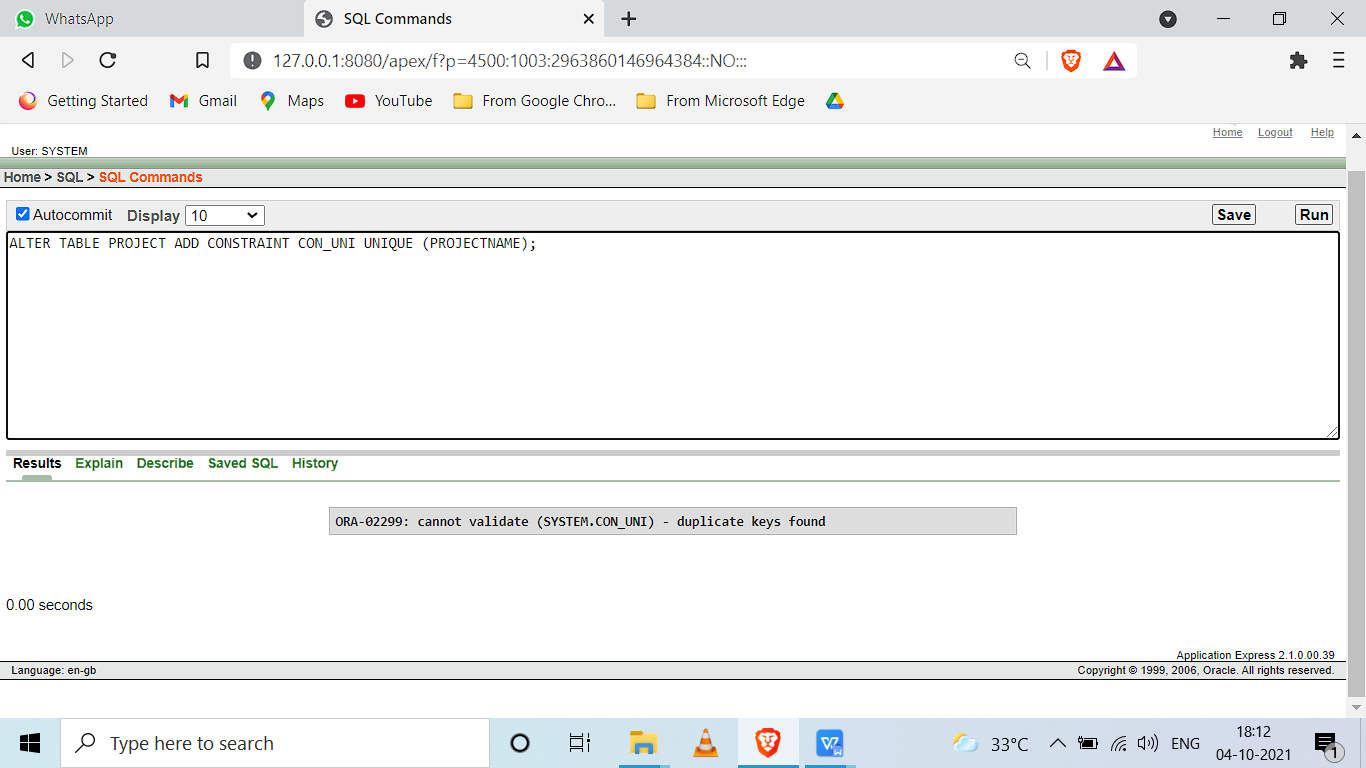
ON DELETE SET NULL;





1. Make name of Project as Unique and sex of employee as not null.

ALTER TABLE PROJECT ADD CONSTRAINT CON\_UNI UNIQUE (PROJECTNAME);

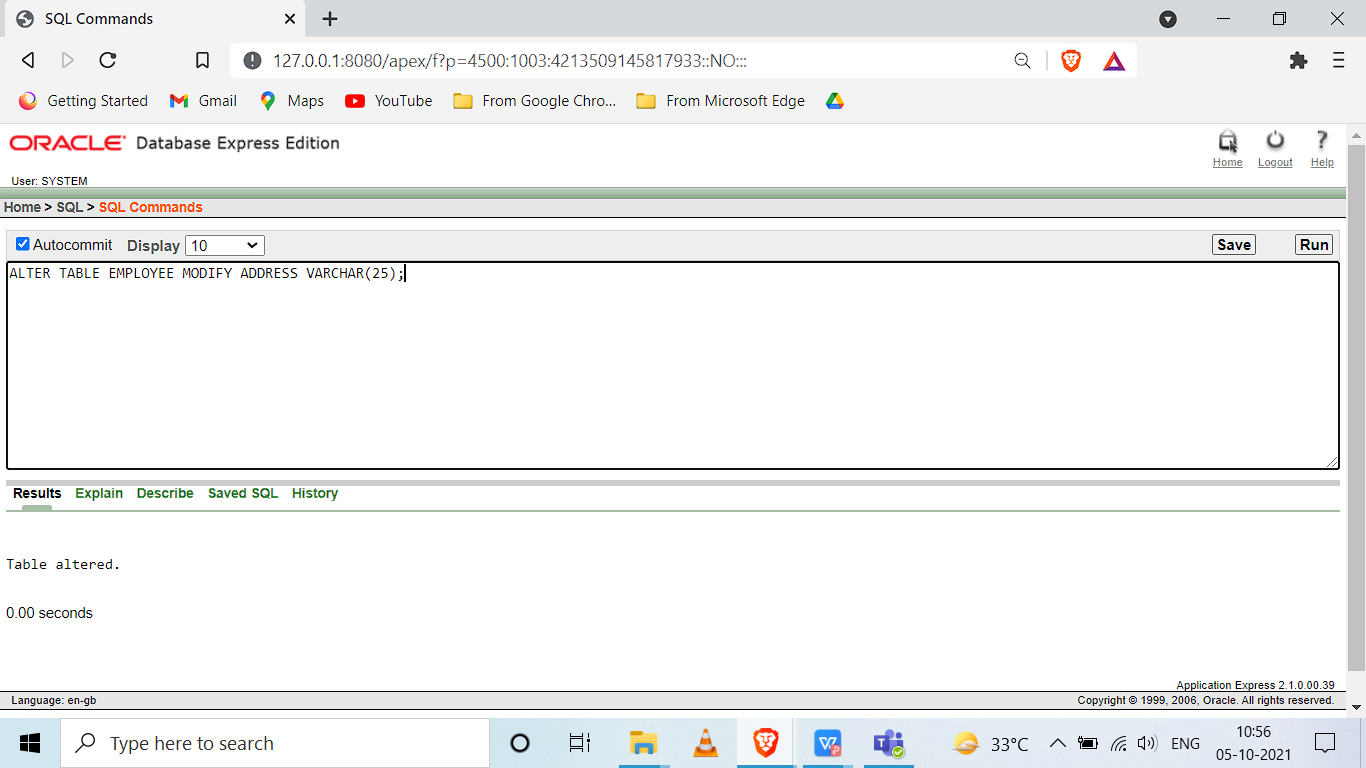


ALTER TABLE EMPLOYEE MODIFY(SEX CHAR(1) CONSTRAINT CON\_SEX1 NOT NULL);



4. Make Address as a new type containing door no, street, city, State, Continent.

ALTER TABLE EMPLOYEE MODIFY ADDRESS VARCHAR(25);



5. Make salary of employee to accept real values.

alter table

EMPLOYEE

modify

(

SALARY NUMBER

);

