SQL HANDSON

VIGNESH B
CDB22DW022, Data
Programmer Analyst
M +91 9790982175

*** I have used PostgreSQL to complete this SQL Handson***

EXERCISE 1:

```
CREATE TABLE Trainer_Info(
Trainer_Id CHAR(20) PRIMARY KEY,
Salutation CHAR(7),
Trainer_Name CHAR(30),
Trainer_Location CHAR(30),
Trainer_Track CHAR(15),
Trainer_Qualification CHAR(100),
Trainer_Experience INTEGER,
Trainer_Email CHAR(100),
Trainer_Password CHAR(20)
);
```

```
CREATE TABLE Batch_Info(
Batch_Id CHAR(20) PRIMARY KEY,
Batch_Owner CHAR(30),
Batch_BU_Name CHAR(30)
);
```

```
CREATE TABLE Module_Info(
Module_Id CHAR(20) PRIMARY KEY,
Module_Name CHAR(40),
Module_Duration INTEGER
);
```

```
CREATE TABLE Associate_Info(
Associate_Id CHAR(20) PRIMARY KEY,
Salutation CHAR(7),
Associate_Name CHAR(30),
Associate_Location CHAR(30),
Associate_Track CHAR(15),
Associate_Qualification CHAR(200),
Associate_Email CHAR(100),
Associate_Password CHAR(20)
);
```

```
CREATE TABLE Questions(
Question_Id CHAR(20) PRIMARY KEY,
```

```
Module_Id CHAR(20) REFERENCES Module_Info(Module_Id),
Question_Text CHAR(900)
);

CREATE TABLE Associate_Status(
Associate_Id CHAR(20) REFERENCES Associate_Info(Associate_Id),
Module_Id CHAR(20) REFERENCES Module_Info(Module_Id),
Batch_Id CHAR(20) REFERENCES Batch_Info(Batch_Id),
Trainer_Id CHAR(20) REFERENCES Trainer_Info(Trainer_Id),
Start_Date CHAR(20),
End_Date CHAR(20)
);


CREATE TABLE Trainer_Feedback(
Trainer_Id CHAR(20) REFERENCES Trainer_Info(Trainer_Id),
Question_Id CHAR(20) REFERENCES Questions(Question_Id),
Batch_Id CHAR(20) REFERENCES Batch_Info(Batch_Id),
Module_Id CHAR(20) REFERENCES Module_Info(Module_Id),
Trainer_Rating INTEGER
);


CREATE TABLE Associate_Feedback(
Associate_Id CHAR(20) REFERENCES Associate_Info(Associate_Id),
Question_Id CHAR(20) REFERENCES Questions(Question_Id),
Module_Id CHAR(20) REFERENCES Module_Info(Module_Id),
Associate_Rating INTEGER
);


CREATE TABLE Login_Details(
User_Id CHAR(20) PRIMARY KEY,
User_Password CHAR(20)
);
```

RESULT:

All the tables have been created.

EXERCISE 2:

```
INSERT INTO Trainer_Info
VALUES
('F001','Mr.','PANKAJ GHOSH','Pune','Java','Bachelor of Technology',
12,'Pankaj.Ghosh@alliance.com','fac1@123'),
('F002','Mr.','SANJAY RADHAKRISHNAN','Bangalore','DotNet','Bachelor of Technology',
12,'Sanjay.Radhakrishnan@alliance.com','fac2@123'),
('F003','Mr.','VIJAY MATHUR','Chennai','Mainframe','Bachelor of Technology',
10,'Vijay.Mathur@alliance.com','fac3@123'),
('F004','Mrs.','NANDINI NAIR','Kolkata','Java','Master of Computer Applications',
9,'Nandini.Nair@alliance.com','fac4@123'),
('F005','Miss.','ANITHA PAREKH','Hyderabad','Testing','Master of Computer Applications',
6,'Anitha.Parekh@alliance.com','fac5@123'),
('F006','Mr.','MANOJ AGRAWAL','Mumbai','Mainframe','Bachelor of Technology',
9,'Manoj.Agrawal@alliance.com','fac6@123'),
```

('F007','Ms.','MEENA KULKARNI','Coimbatore','Testing','Bachelor of Technology',
5,'Meena.Kulkarni@alliance.com','fac7@123'),
('F009','Mr.','SAGAR MENON','Mumbai','Java','Master of Science',
12,'Sagar.Menon@alliance.com','fac8@123');

INSERT INTO Batch_Info
VALUES
('B001','MRS.SWATI ROY','MSP'),
('B002','MRS.ARURNA K','HEALTHCARE'),
('B003','MR.RAJESH KRISHNAN','LIFE SCIENCES'),
('B004','MR.SACHIN SHETTY','BFS'),
('B005','MR.RAMESH PATEL','COMMUNICATIONS'),
('B006','MRS.SUSAN CHERIAN','RETAIL & HOSPITALITY'),
('B007','MRS.SAMPADA JAIN','MSP'),
('B008','MRS.KAVITHA REGE','BPO'),
('B009','MR.RAVI SEJPAL','MSP');

INSERT INTO Module_Info
VALUES
('O10SQL','Oracle 10g SQL',16),
('O10PLSQL','Oracle 10g PL',16),
('J2SE','Core Java SE 1.6',288),
('J2EE','Advanced Java EE 1.6',80),
('JAVAFX','JavaFX 2.1',80),
('DOTNT4','.Net Framework 4.0',50),
('SQL2008','MS SQL Server 2008',120),
('MSBI08','MS BI Studio 2008',158),
('SHRPNT','MS Share Point',80),
('ANDRD4','Android 4.0',200),
('EM001','Instructor',0),
('EM002','Course Material',0),
('EM003','Learning Effectiveness',0),
('EM004','Environment',0),
('EM005','Job Impact',0),
('TM001','Attendees',0),
('TM002','Course Material',0),
('TM003','Environment',0);

INSERT INTO Associate_Info
VALUES
('A001','Miss.','GAYATHRI NARAYANAN','Gurgaon','Java','Bachelor of Technology',
'Gayathri.Narayanan@hp.com','tne1@123'),
('A002','Mrs.','RADHIKA MOHAN','Kerala','Java','Bachelor of Engineering
in Information Technology','Radhika.Mohan@cognizant.com','tne2@123'),
('A003','Mr.','KISHORE SRINIVAS','Chennai','Java','Bachelor of Engineering
in Computers','Kishore.Srinivas@ibm.com','tne3@123'),
('A004','Mr.','ANAND RANGANATHAN','Mumbai','DotNet','Master of Computer Applications',
'Anand.Ranganathan@finolex.com','tne4@123'),
('A005','Miss.','LEELA MENON','Kerala','Mainframe','Bachelor of Engineering
in Information Technology','Leela.Menon@microsoft.com','tne5@123'),
('A006','Mrs.','ARTI KRISHNAN','Pune','Testing','Master of Computer Applications',
'Arti.Krishnan@cognizant.com','tne6@123'),
('A007','Mr.','PRABHAKAR SHUNMUGHAM','Mumbai','Java','Bachelor of Technology',
'Prabhakar.Shunmugham@honda.com','tne7@123');

```
INSERT INTO Questions
VALUES
('Q001','EM001','Instructor knowledgeable and able to handle all your queries'),
('Q002','EM001','All the topics in a particular course handled by the trainer without any gaps or slippages'),
('Q003','EM002','The course materials presentation, handson, etc., refered during the training are relevant and
useful.'),
('Q004','EM002','The Hands on session adequate enough to grasp the understanding of the topic.'),
('Q005','EM002','The reference materials suggested for each module are adequate.'),
('Q006','EM003','Knowledge and skills presented in this training are applicable at your work'),
('Q007','EM003','This training increases my proficiency level'),
('Q008','EM004','The physical environment e.g. classroom space,air-conditioning was conductive to learning.'),
('Q009','EM004','The software/hardware environment provided was sufficient for the purpose of the training'),
('Q010','EM005','This training will improve your job performance.'),
('Q011','EM005','This training align with the business priorities and goals.'),
('Q012','TM001','Participants were receptive and had attitude towards learning.'),
('Q013','TM001','All participants gained the knowledge and the practical skills after this training.'),
('Q014','TM002','The course materials presentation, handson, etc., available for the session covers the entire
objectives of the course.'),
('Q015','TM002','Complexity of the course is adequate for the participate level.'),
('Q016','TM002','Case study and practical demos helpful in understanding of the topic'),
('Q017','TM003','The physical environment e.g. classroom space, air-conditioning was conductive to learning.'),
('Q018','TM003','The software/hardware environment provided was adequate for the purpose of the training.');
```

```
INSERT INTO Associate_Status
VALUES
('A001','O10SQL','B001','F001','2000-12-15','2000-12-25'),
('A002','O10SQL','B001','F001','2000-12-15','2000-12-25'),
('A003','O10SQL','B001','F001','2000-12-15','2000-12-25'),
('A001','O10PLSQL','B002','F002','2001-2-1','2000-2-12'),
('A002','O10PLSQL','B002','F002','2001-2-1','2000-2-12'),
('A003','O10PLSQL','B002','F002','2001-2-1','2000-2-12'),
('A001','J2SE','B003','F003','2002-8-20','2002-10-25'),
('A002','J2SE','B003','F003','2002-8-20','2002-10-25'),
('A001','J2EE','B004','F004','2005-12-1','2005-12-25'),
('A002','J2EE','B004','F004','2005-12-1','2005-12-25'),
('A003','J2EE','B004','F004','2005-12-1','2005-12-25'),
('A004','J2EE','B004','F004','2005-12-1','2005-12-25'),
('A005','JAVAFX','B005','F006','2005-12-4','2005-12-20'),
('A006','JAVAFX','B005','F006','2005-12-4','2005-12-20'),
('A006','SQL2008','B006','F007','2007-6-21','2007-6-28'),
('A007','SQL2008','B006','F007','2007-6-21','2007-6-28'),
('A002','MSBI08','B007','F006','2009-6-26','2009-6-29'),
('A003','MSBI08','B007','F006','2009-6-26','2009-6-29'),
('A004','MSBI08','B007','F006','2009-6-26','2009-6-29'),
('A002','ANDRD4','B008','F005','2010-6-5','2010-6-28'),
('A005','ANDRD4','B008','F005','2010-6-5','2010-6-28'),
('A003','ANDRD4','B009','F005','2011-8-1','2011-8-20'),
('A006','ANDRD4','B009','F005','2011-8-1','2011-8-20');
```

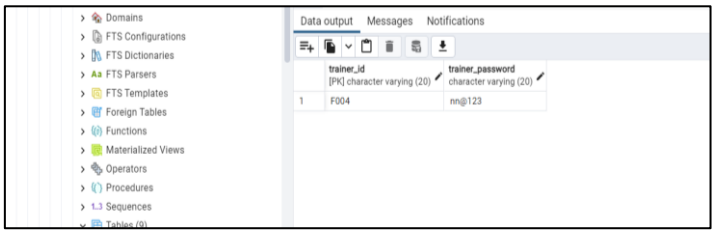
RESULT:

All the given data's have been inserted into the corresponding tables.

EXERCISE 3:

```
UPDATE Trainer_Info
SET Trainer_Password = 'nn@123'
WHERE Trainer_ID = 'F004';
```

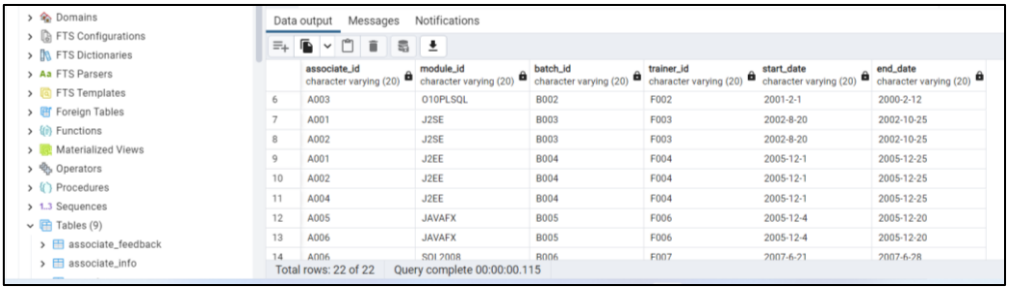
RESULT:



EXERCISE 4:

```
DELETE FROM Associate_Status
WHERE Associate_ID = 'A003' AND Module_Id='J2EE';
```

RESULT:



EXERCISE 5:

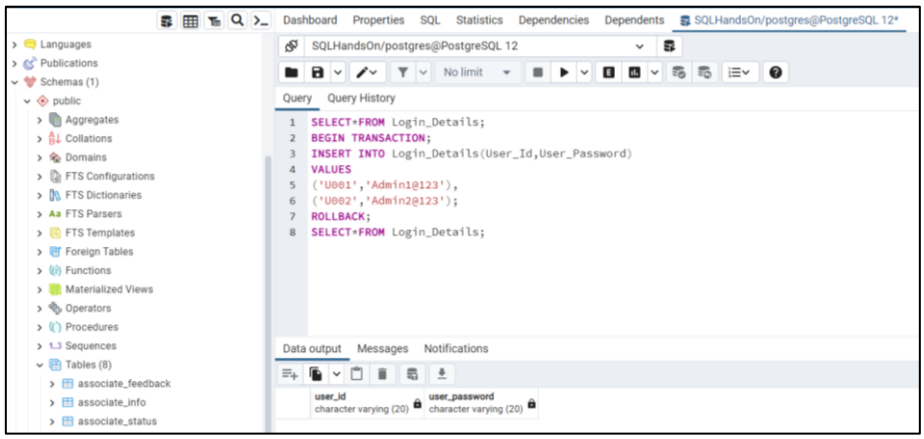
```
SELECT * FROM Trainer_Info
ORDER BY Trainer_Experience DESC
LIMIT 5;
```

RESULT:

EXERCISE 6:

```
SELECT*FROM Login_Details;
BEGIN TRANSACTION;
INSERT INTO Login_Details
VALUES
('U001','Admin1@123'),
('U002','Admin2@123');
ROLLBACK;
SELECT*FROM Login_Details;
```

RESULT:



EXERCISE 7;

```
CREATE USER 'vignesh' WITH ENCRYPTED PASSWORD 'Vignesh141099';
GRANT CREATE ON sqlhandson TO 'vignesh';
GRANT SELECT ON sqlhandson.Login_Details TO 'vignesh';
BEGIN TRANSACTION;
SELECT*FROM Login_Details;
INSERT INTO Login_Details(User_Id,User_Password)
VALUES
('U001','Admin1@123'),
('U002','Admin2@123');
ROLLBACK;
SELECT*FROM Login_Details;
REVOKE CREATE ON sqlhandson FROM 'vignesh';
REVOKE SELECT ON sqlhandson.Login_Details FROM 'vignesh';
```

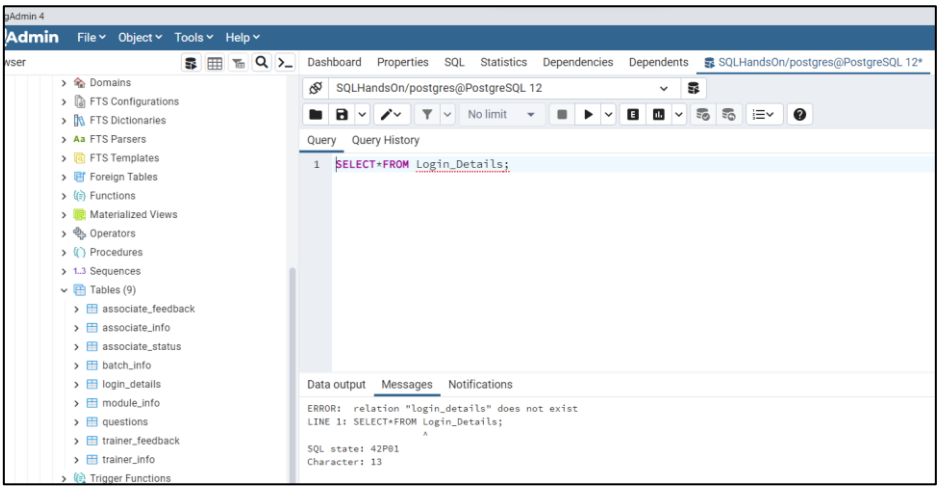
RESULT:

A user has been created and granted with CREATE and Select privileges. Then, the last exercise codings have been re executed and we get empty table. Finally, we REVOKE the granted privileges from the created user.

EXERCISE 8:

DROP TABLE Login_Details;

RESULT:



EXERCISE 9:

CREATE TABLE suppliers(
supplier_id_Id INTEGER NOT NULL,
supplier_name VARCHAR(50) NOT NULL,
address VARCHAR(50),
city VARCHAR(50),
state VARCHAR(25),
zip_code VARCHAR(10)
);

RESULT:

EXERCISE 10:

```
CREATE TABLE Course_Fees(
COURSE_CODE VARCHAR(20) ,
BASE_FEES INTEGER,
SPECIAL_FEES INTEGER,
DISCOUNT INTEGER
);
```

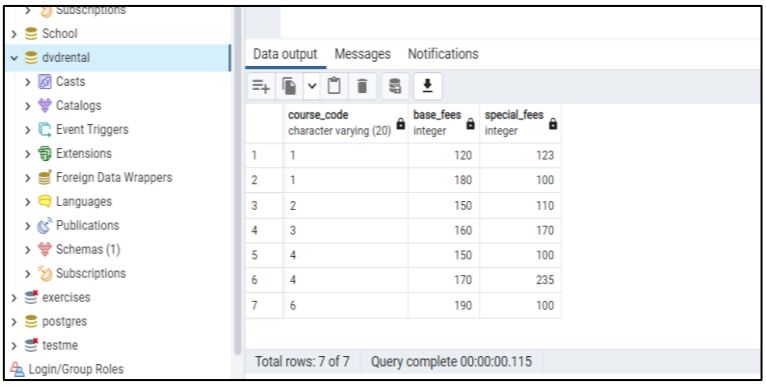
```
CREATE TABLE CourseFees_History(
COURSE_CODE VARCHAR(20) PRIMARY KEY,
BASE_FEES INTEGER,
SPECIAL_FEES INTEGER,
CREATED_BY VARCHAR(50),
Updated_BY VARCHAR(50)
);
```

```
INSERT INTO Course_Fees
VALUES
('1',180,100,10),
('2',150,110,10),
('3',160,170,5),
('4',150,100,10),
('6',190,100,10);
```

```
INSERT INTO CourseFees_History
VALUES
('1',120,123,'Ram','Ramesh'),
('2',150,110,'Bala','Ram'),
('3',160,170,'Bala','Vinu'),
('4',170,235,'Ram','Ram'),
('6',190,100,'Vinod','Vinod');
```

```
SELECT DISTINCT COURSE_CODE,BASE_FEES,SPECIAL_FEES FROM Course_Fees
UNION
SELECT DISTINCT COURSE_CODE,BASE_FEES,SPECIAL_FEES FROM CourseFees_History
ORDER BY COURSE_CODE;
```

RESULT:



EXERCISE 11:

```
SELECT COUNT(*) FROM Course_Fees;
SELECT COUNT(DISTINCT COURSE_CODE)FROM Course_Fees;
```

- Since both count is equal, course_code is unique in course_fees table.

```
SELECT COUNT(DISTINCT BASE_FEES)FROM Course_Fees;
```

- Since both count is not equal, base_fees is not unique in course_fees table.

```
SELECT COUNT(DISTINCT SPECIAL_FEES)FROM Course_Fees;
```

- Since both count is not equal, special_fees is not unique in course_fees table.

```
SELECT COUNT(*) FROM CourseFees_History;
SELECT COUNT(DISTINCT COURSE_CODE)FROM CourseFees_History;
```

- Since both count is equal, course_code is unique in coursefees_history table.

```
SELECT COUNT(DISTINCT BASE_FEES)FROM CourseFees_History;
```

- Since both count is equal, base_fees is unique in coursefees_history table.

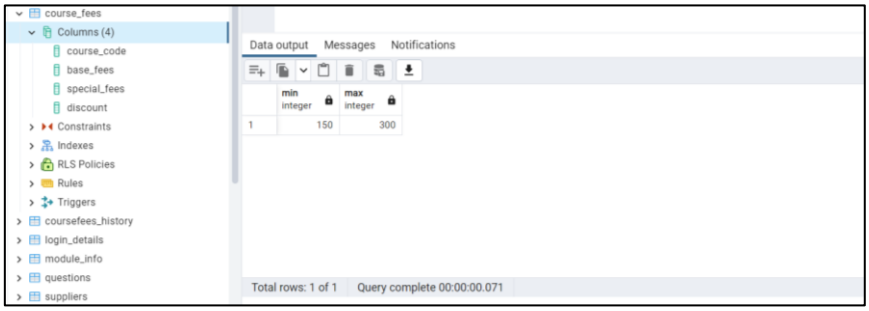
```
SELECT COUNT(DISTINCT SPECIAL_FEES)FROM CourseFees_History;
```

- Since both count is equal, specialfees is unique in coursefees_history table.

EXERCISE 12:

```
CREATE TABLE course_info(
COURSE_CODE VARCHAR(10) PRIMARY KEY,
COURSE_NAME VARCHAR(20) NOT NULL,
COURSE_DESCRIPTION VARCHAR(25),
COURSE_START_DATE DATE,
COURSE_DURATION INTEGER,
NO_OF_PARTICIPANTS INTEGER,
COURSE_TYPE CHAR(3));


CREATE TABLE Student_info(
STUDENT_ID VARCHAR(10) PRIMARY KEY,
FIRST_NAME VARCHAR(20),
LAST_NAME VARCHAR(25),
ADDRESS VARCHAR(150));


INSERT INTO Course_Fees
VALUES
('7',NULL,400,12),
('8',NULL,410,16),
('9',300,210,13),
('10',175,400,12);


SELECT MIN(base_fees),Max(base_fees)FROM course_fees;
```

RESULT:

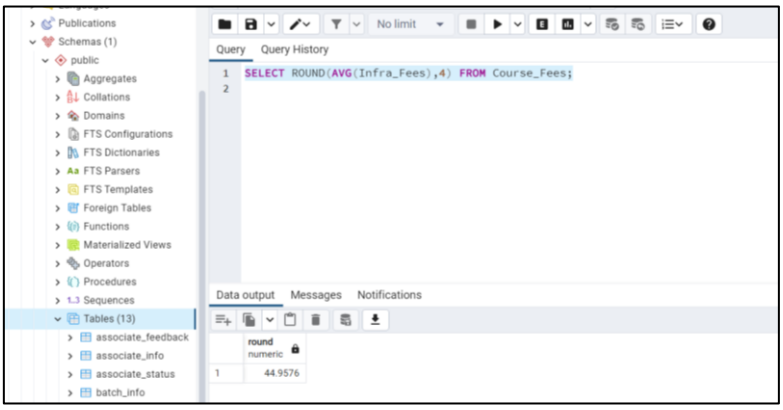


EXERCISE 13 & EXERCISE 14

```
ALTER TABLE Course_Fees
ADD COLUMN Infra_Fees DECIMAL(5,3);

UPDATE Course_Fees
SET Infra_Fees = 45.751
WHERE Course_Code = '1';
UPDATE Course_Fees
SET Infra_Fees = 43.453
WHERE Course_Code = '2';
UPDATE Course_Fees
SET Infra_Fees = 41.234
WHERE Course_Code = '3';
UPDATE Course_Fees
SET Infra_Fees = 47.493
WHERE Course_Code = '4';
UPDATE Course_Fees
SET Infra_Fees = 48.051
WHERE Course_Code = '6';
UPDATE Course_Fees
SET Infra_Fees = 42.481
WHERE Course_Code = '7';
UPDATE Course_Fees
SET Infra_Fees = 46.021
WHERE Course_Code = '8';
UPDATE Course_Fees
SET Infra_Fees = 40.373
WHERE Course_Code = '9';
UPDATE Course_Fees
SET Infra_Fees = 49.761
WHERE Course_Code = '10';
```

Solution for EXERCISE 13:
SELECT ROUND(AVG(Infra_Fees),4) FROM Course_Fees;

RESULT:



Solution for EXERCISE 14:
SELECT Course_Name, AGE(CURRENT_DATE,Course_Start_DATE) AS number_of_days
FROM Course_info;

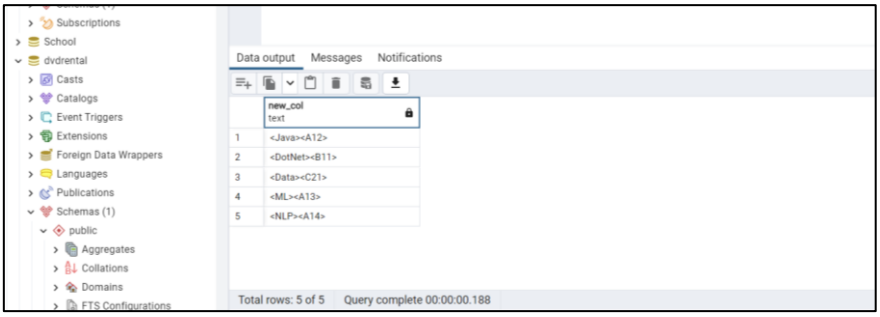
RESULT:

A Query which is asked for this exercise is developed.

EXERCISE 15:

SELECT CONCAT('<',Course_Name,'>','<',Course_Code,'>') As New_Col FROM Course_Info;

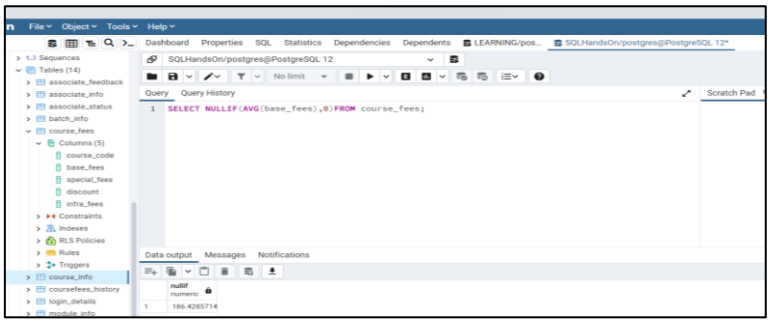
RESULT:



EXERCISE 16:

SELECT NULLIF(AVG(base_fees),0)FROM course_fees;

RESULT:

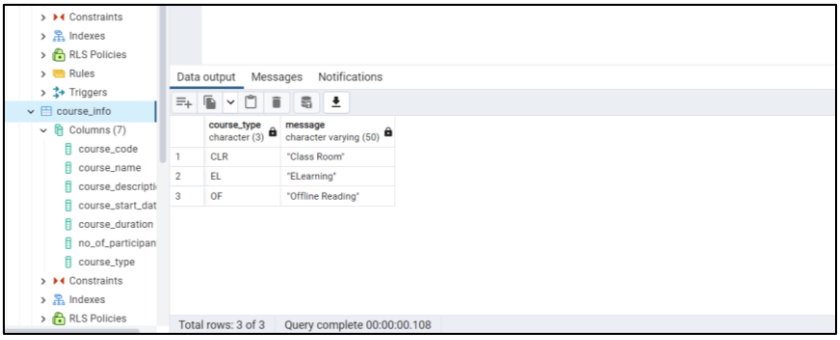


EXERCISE 17:

ALTER TABLE Course_Info
ADD Message VARCHAR(50);
INSERT INTO Course_Info(Course_code,Course_Name,Course_Type,Message)
Values
('A12','Java','CLR','"Class Room"'),
('B11','DotNet','EL','"ELearning"'),
('C21','Data','OF','"Offline Reading"');

SELECT Course_Type,Message FROM Course_Info;

RESULT:



EXERCISE 18:

ALTER TABLE Course_Info
ADD COLUMN Date_of_Enrollment DATE;

SELECT Course_Start_Date, SUM(No_Of_Participants)As Tot_No_Of_Students FROM Course_Info
WHERE Date_Of_Enrollment = '2021-08-24'
GROUP BY Course_Start_Date;

RESULT:

A Query which is asked for this exercise is developed.

EXERCISE 19:

```
SELECT Course_Start_Date, SUM(No_Of_Participants)As Tot_No_Of_Students FROM Course_Info
WHERE Course_Type = 'CLR'
GROUP BY Course_Start_Date;
```

RESULT:

A Query which is asked for this exercise is developed.

EXERCISE 20:

```
SELECT Course_Start_Date, SUM(No_Of_Participants)As Tot_No_Of_Students FROM Course_Info
WHERE Course_Type = 'CLR'
GROUP BY Course_Start_Date
HAVING SUM(No_Of_Participants)>10;
```

RESULT:

A Query which is asked for this exercise is developed.

EXERCISE 21:

```
SELECT * FROM Course_Info
ORDER BY Course_Duration ASC;
```

RESULT:

A Query which is asked for this exercise is developed.

EXERCISE 22:

```
ALTER TABLE Student_INFO
ADD COLUMN Course_Code VARCHAR(10) REFERENCES Course_Info(Course_Code);

SELECT Student_Info.Student_Id,
Student_Info.First_Name,Student_Info.Last_Name,Course_Info.Course_Code
FROM Student_Info
INNER JOIN Course_Info ON
Student_Info.Course_Code = Course_Info.Course_Code
WHERE Course_Info.Course_Code= '167';
```

RESULT:

A Query which is asked for this exercise is developed.

EXERCISE 23:

```
SELECT Course_Info.Course_Name,Course_Info.Course_Description,Course_Fees.Discount
FROM Course_Fees
INNER JOIN Course_Info
ON Course_Fees.Course_Code = Course_Info.Course_Code;
```

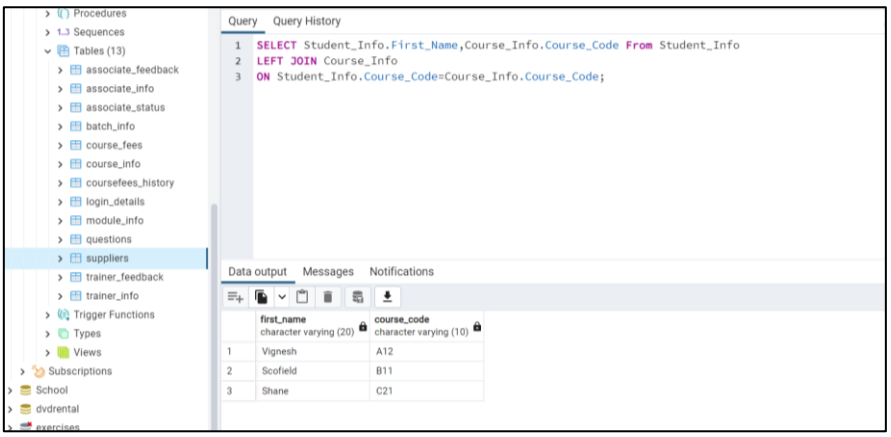
RESULT:

A Query which is asked for this exercise is developed.

EXERCISE 24:

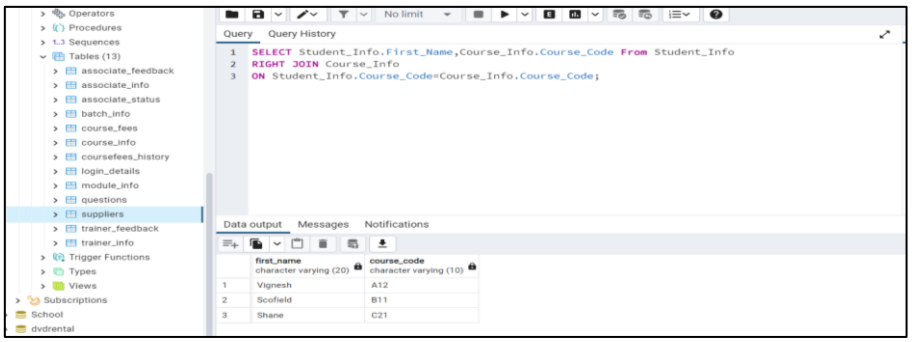
```
INSERT INTO Student_Info
VALUES
('C001','Vignesh','Baskar','Royapuram,Chennai','A12'),
('C002','Scofield','Micheal','New road,Denmark','B11'),
('C003','Shane','Den','GST road,Rio','C21');

SELECT Student_Info.First_Name,Course_Info.Course_Code From Student_Info
LEFT JOIN Course_Info
ON Student_Info.Course_Code=Course_Info.Course_Code;
```

RESULT:




```
SELECT Student_Info.First_Name,Course_Info.Course_Code From Student_Info
RIGHT JOIN Course_Info
ON Student_Info.Course_Code=Course_Info.Course_Code;
```

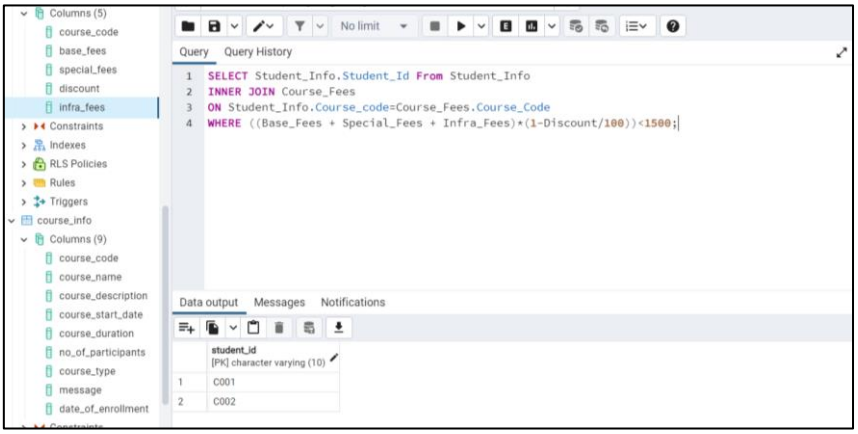
RESULT:



EXERCISE 25:

```
INSERT INTO Course_Info(Course_code,Course_Name,No_Of_Participants,Course_Type)
VALUES
('A13','ML',5,'AB'),
('A14','NLP',3,'BC');

INSERT INTO Course_Fees(Course_Code,Base_Fees,Special_Fees,Discount,Infra_Fees)
VALUES
('A12',150,140,18,43.643),
('B11',135,155,14,47.980);

INSERT INTO Student_Info(Student_Id,First_Name,Last_Name,Course_Code)
VALUES
('C004','Anita','Suresh','A13'),
('C005','Sundar','Pichai','A14');

SELECT Student_Info.Student_Id From Student_Info
INNER JOIN Course_Fees
ON Student_Info.Course_code=Course_Fees.Course_Code
WHERE ((Base_Fees + Special_Fees + Infra_Fees)*(1-Discount/100))<1500
```

RESULT:



EXERCISE 26:

```
SELECT Student_Info.Student_Id,Student_Info.First_Name,Student_Info.Last_Name From Student_Info
INNER JOIN Course_Fees
ON Student_Info.Course_code=Course_Fees.Course_Code
WHERE ((Base_Fees + Special_Fees + Infra_Fees)*(1-Discount/100))<1500;
```

RESULT: