DONE BY~
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Prior Instructions

- **Please do read all the questions before performing any operations in the database**
- **Once you have fully gone through the questions then likewise decide the contents and table columns and follow the below instructions**

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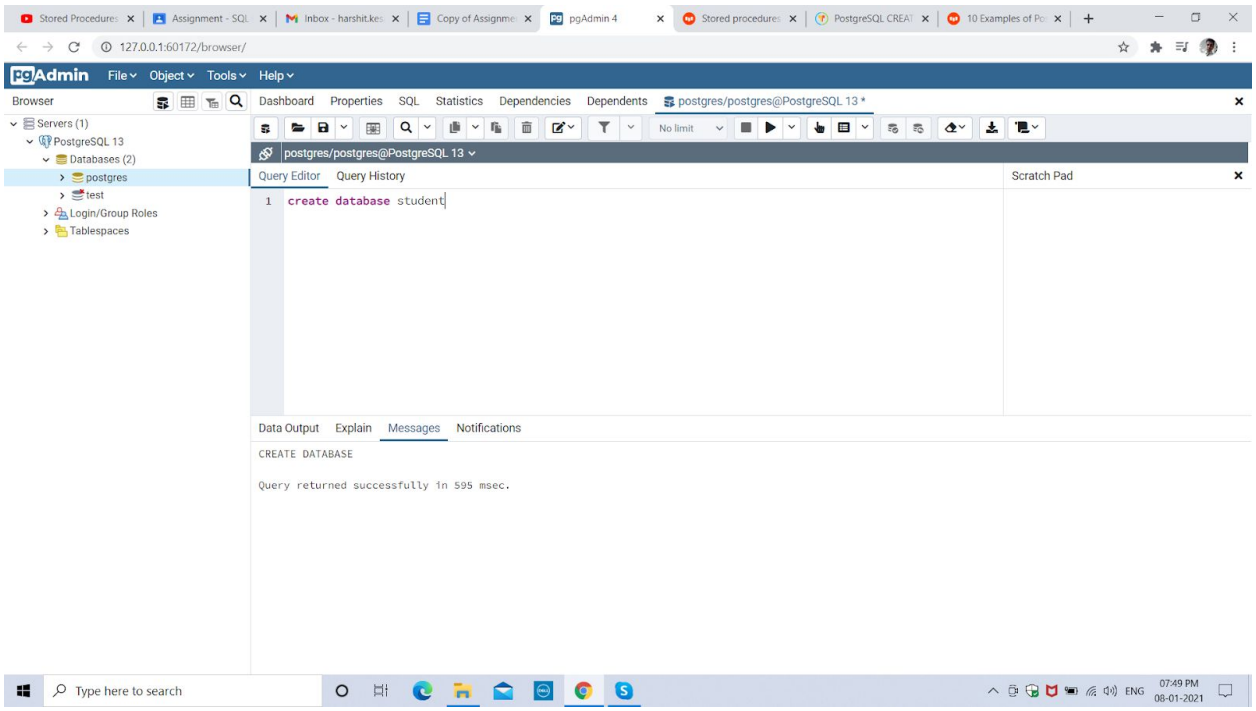
1. **Create Student Database**

Query: create database student

Screen Shot:

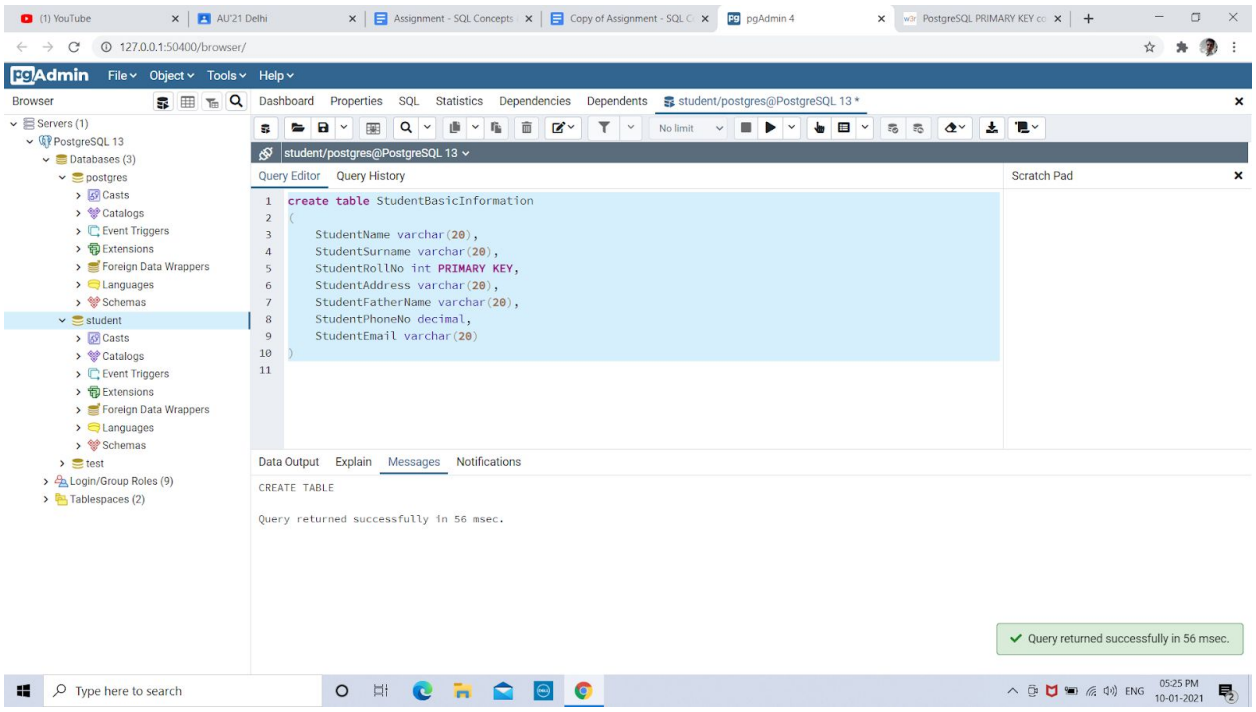


2. **Create the following table under the Student Database:**
    a. **StudentBasicInformation**
        i. **Columns**
            1. **StudentName**
            2. **StudentSurname**
            3. **StudentRollNo**

4. **StudentAddress**
5. **Add more three basic columns of the name of your own**

Query: create table StudentBasicInformation
(
StudentName varchar(20),
StudentSurname varchar(20),
StudentRollNo int PRIMARY KEY,
StudentAddress varchar(20),
StudentFatherName varchar(20),
StudentPhoneNo decimal,
StudentEmail varchar(20)
)

Screen Shot:

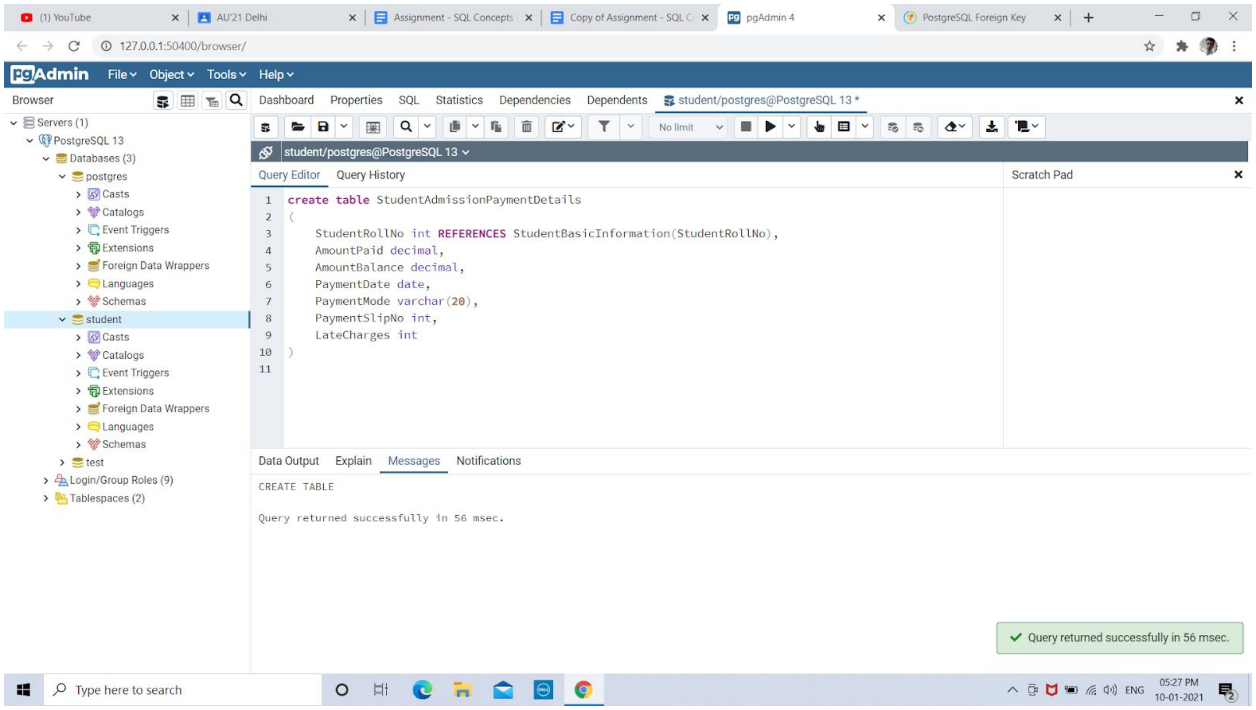


b. **StudentAdmissionPaymentDetails**
   i. **Columns**
      1. **StudentRollNo**
      2. **AmountPaid**
      3. **AmountBalance**
      4. **Add more four basic columns of the name of your own**

Query: create table StudentAdmissionPaymentDetails
(
StudentRollNo int REFERENCES StudentBasicInformation(StudentRollNo),

AmountPaid decimal,
AmountBalance decimal,
PaymentDate date,
PaymentMode varchar(20),
PaymentSlipNo int,
LateCharges int
)

Screen Shot:



c. StudentSubjectInformation

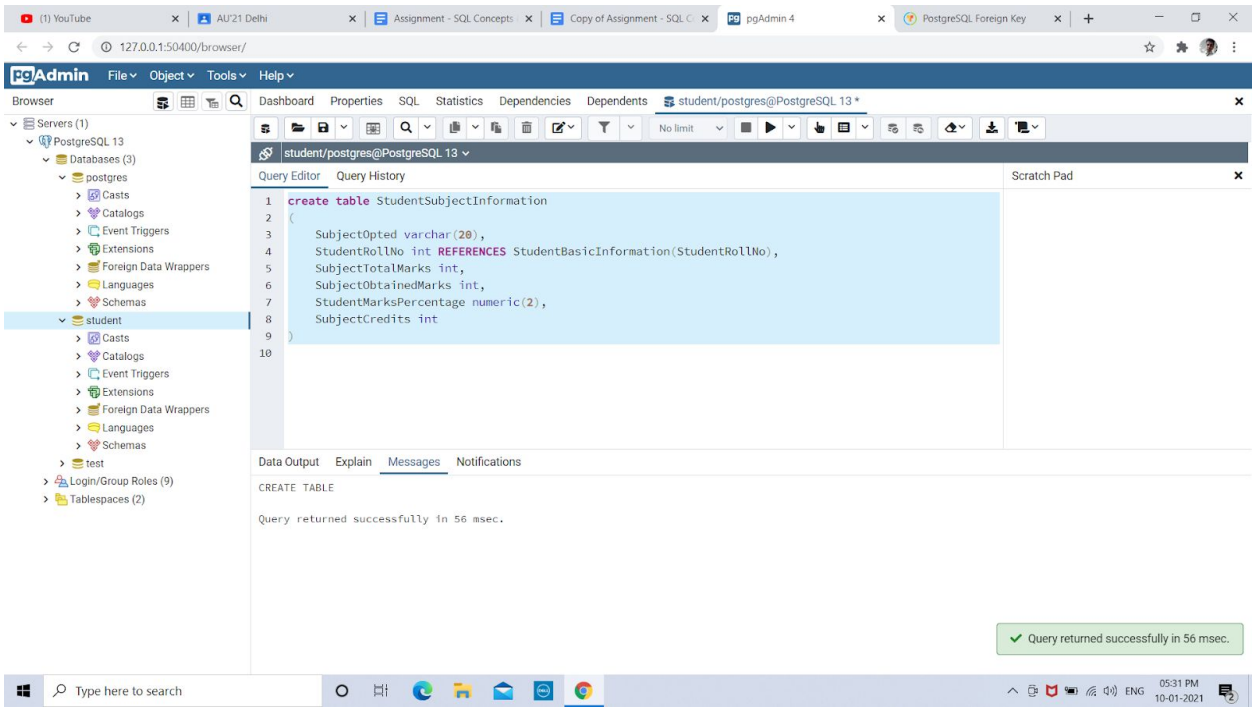
i. Columns

1. **SubjectOpted**
2. **StudentRollNo**
3. **SubjectTotalMarks**
4. **SubjectObtainedMarks**
5. **StudentMarksPercentage**
6. **Add more one columns of the name of your own**

Query: create table StudentSubjectInformation
(
SubjectOpted varchar(20),
StudentRollNo int REFERENCES StudentBasicInformation(StudentRollNo),
SubjectTotalMarks int,
SubjectObtainedMarks int,

StudentMarksPercentage numeric(2),
SubjectCredits int
)

Screen Shot:



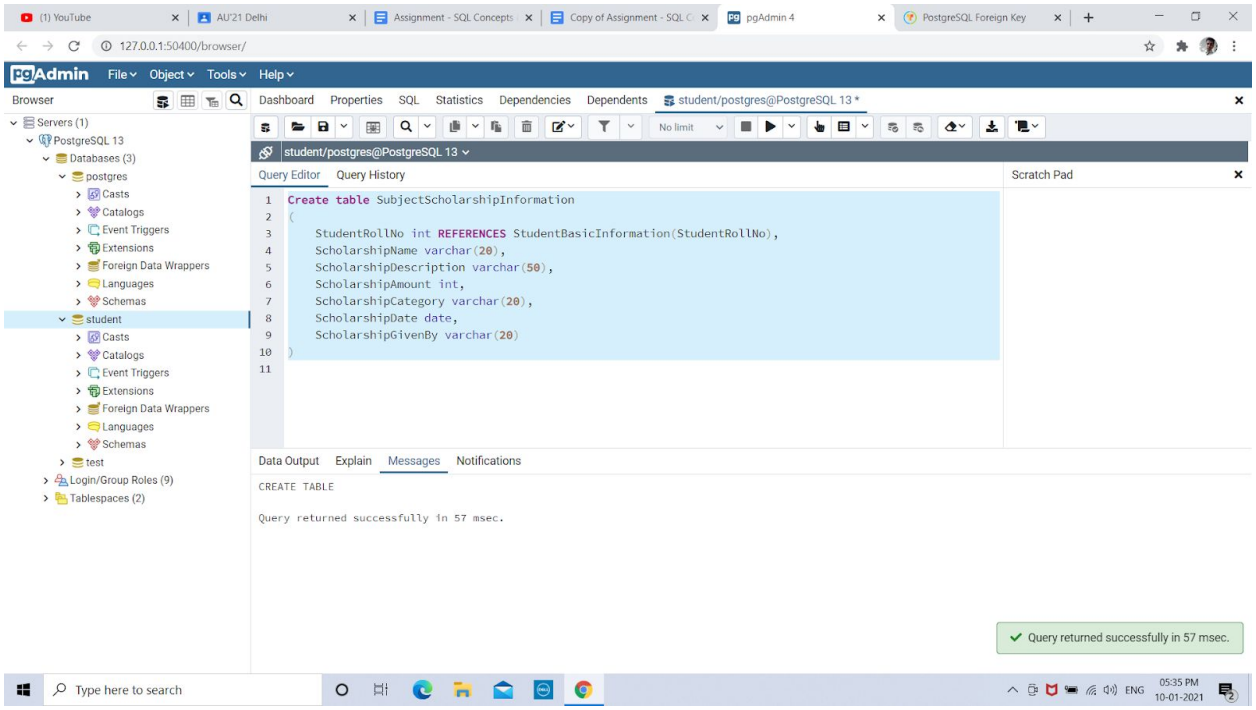
d. SubjectScholarshipInformation

i. Columns

1. **StudentRollNo**
2. **ScholarshipName**
3. **ScholarshipDescription**
4. **ScholarshipAmount**
5. **ScholarshipCategory**
6. **Add more two columns of the name of your own**

Query: Create table SubjectScholarshipInformation
(
StudentRollNo int REFERENCES StudentBasicInformation(StudentRollNo),
ScholarshipName varchar(20),
ScholarshipDescription varchar(50),
ScholarshipAmount int,
ScholarshipCategory varchar(20),
ScholarshipDate date,
ScholarshipGivenBy varchar(20)
)

Screen Shot:



3. **Insert more than 10 records in each and every table created**

Query:

Screen Shot:

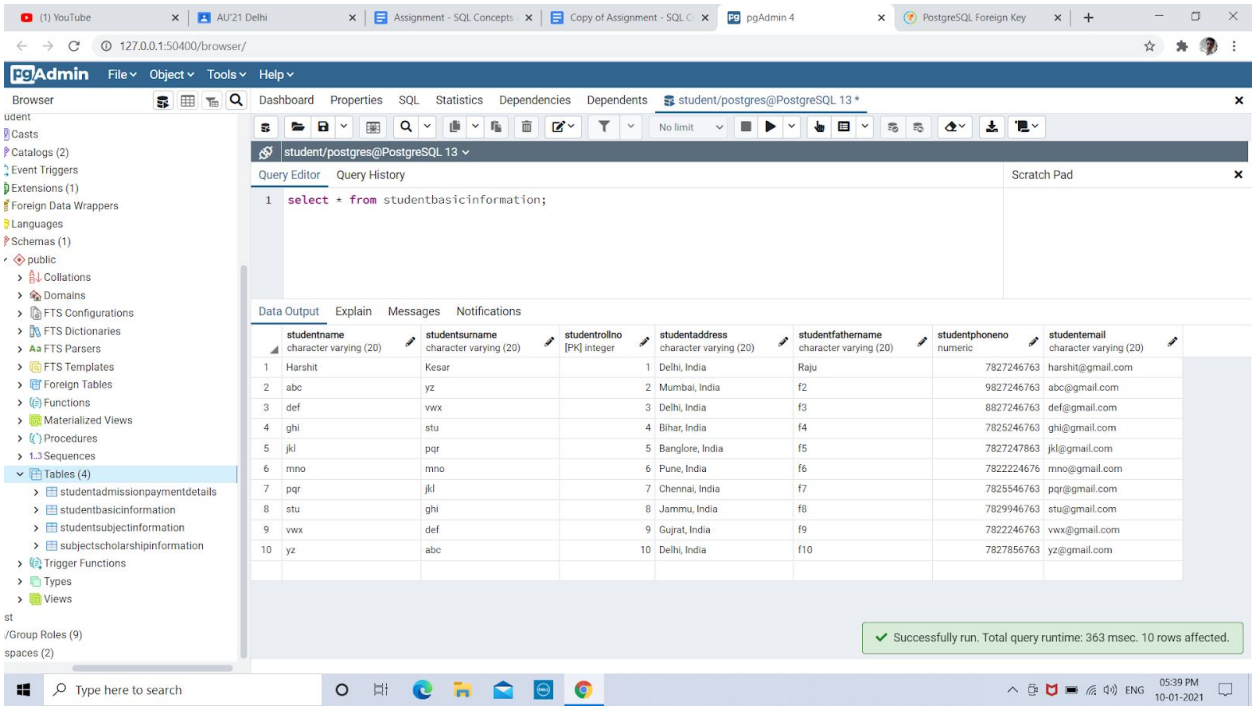
4. **Snap of the all the tables once the insertion is completed**

TABLE 1:

Query: insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName, StudentPhoneNo, StudentEmail)
values ('Harshit', 'Kesar', 1, 'Delhi, India', 'Raju', 7827246763, 'harshit@gmail.com');
insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName, StudentPhoneNo, StudentEmail)
values ('abc', 'yz', 2, 'Mumbai, India', 'f2', 9827246763, 'abc@gmail.com');
insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName, StudentPhoneNo, StudentEmail)
values ('def', 'vwx', 3, 'Delhi, India', 'f3', 8827246763, 'def@gmail.com');
insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName, StudentPhoneNo, StudentEmail)

```
values ('ghi', 'stu', 4, 'Bihar, India', 'f4', 7825246763, 'ghi@gmail.com');
insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName,
StudentPhoneNo, StudentEmail)
values ('jkl', 'pqr', 5, 'Banglore, India', 'f5', 7827247863, 'jkl@gmail.com');
insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName,
StudentPhoneNo, StudentEmail)
values ('mno', 'mno', 6, 'Pune, India', 'f6', 7822224676, 'mno@gmail.com');
insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName,
StudentPhoneNo, StudentEmail)
values ('pqr', 'jkl', 7, 'Chennai, India', 'f7', 7825546763, 'pqr@gmail.com');
insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName,
StudentPhoneNo, StudentEmail)
values ('stu', 'ghi', 8, 'Jammu, India', 'f8', 7829946763, 'stu@gmail.com');
insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName,
StudentPhoneNo, StudentEmail)
values ('vwx', 'def', 9, 'Gujrat, India', 'f9', 7822246763, 'vwx@gmail.com');
insert into StudentBasicInformation
(StudentName, StudentSurname, StudentRollNo, StudentAddress, StudentFatherName,
StudentPhoneNo, StudentEmail)
values ('yz', 'abc', 10, 'Delhi, India', 'f10', 7827856763, 'yz@gmail.com');
```

Screen Shot:



	studentname character varying (20)	studentsurname character varying (20)	studentrollno [PK] integer	studentaddress character varying (20)	studentfathername character varying (20)	studentphoneno numeric	studentemail character varying (20)
1	Harshit	Kesar	1	Delhi, India	Raju	7827246763	harshit@gmail.com
2	abc	yz	2	Mumbai, India	f2	9827246763	abc@gmail.com
3	def	vwx	3	Delhi, India	f3	8827246763	def@gmail.com
4	ghi	stu	4	Bihar, India	f4	7825246763	ghi@gmail.com
5	jkl	pqr	5	Banglore, India	f5	7827247863	jkl@gmail.com
6	mno	mno	6	Pune, India	f6	7822224676	mno@gmail.com
7	pqr	jkl	7	Chennai, India	f7	7825546763	pqr@gmail.com
8	stu	ghi	8	Jammu, India	f8	7829946763	stu@gmail.com
9	vwx	def	9	Gujrat, India	f9	7822246763	vwx@gmail.com
10	yz	abc	10	Delhi, India	f10	7827856763	yz@gmail.com

TABLE 2:

Query: insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo, LateCharges)
values (2, 50000, 25000, '25-12-2020', 'UPI', 123, 2500);
insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo, LateCharges)
values (1, 55000, 20000, '20-08-2019', 'Paytm', 124, 250);
insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo, LateCharges)
values (3, 40000, 35000, '02-01-2020', 'AXIS BANK', 125, 1700);
insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo, LateCharges)
values (4, 30000, 45000, '04-02-2020', 'PNB', 126, 2100);
insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo, LateCharges)
values (5, 35000, 30000, '06-03-2020', 'CANARA BANK', 127, 0);

```
insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo,
LateCharges)
values (6, 48000, 24000, '08-04-2020', 'WALLET', 128, 25);
insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo,
LateCharges)
values (7, 16000, 2000, '10-05-2020', 'SBI', 129, 50);
insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo,
LateCharges)
values (8, 8000, 20000, '15-06-2020', 'RBI', 130, 20);
insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo,
LateCharges)
values (9, 51000, 8000, '18-07-2020', 'DENABANK', 131, 250);
insert into StudentAdmissionPaymentDetails
(StudentRollNo, AmountPaid, AmountBalance, PaymentDate, PaymentMode, PaymentSlipNo,
LateCharges)
values (10, 17000, 19000, '22-09-2020', 'BOB', 132, 500);
```

Screen Shot:

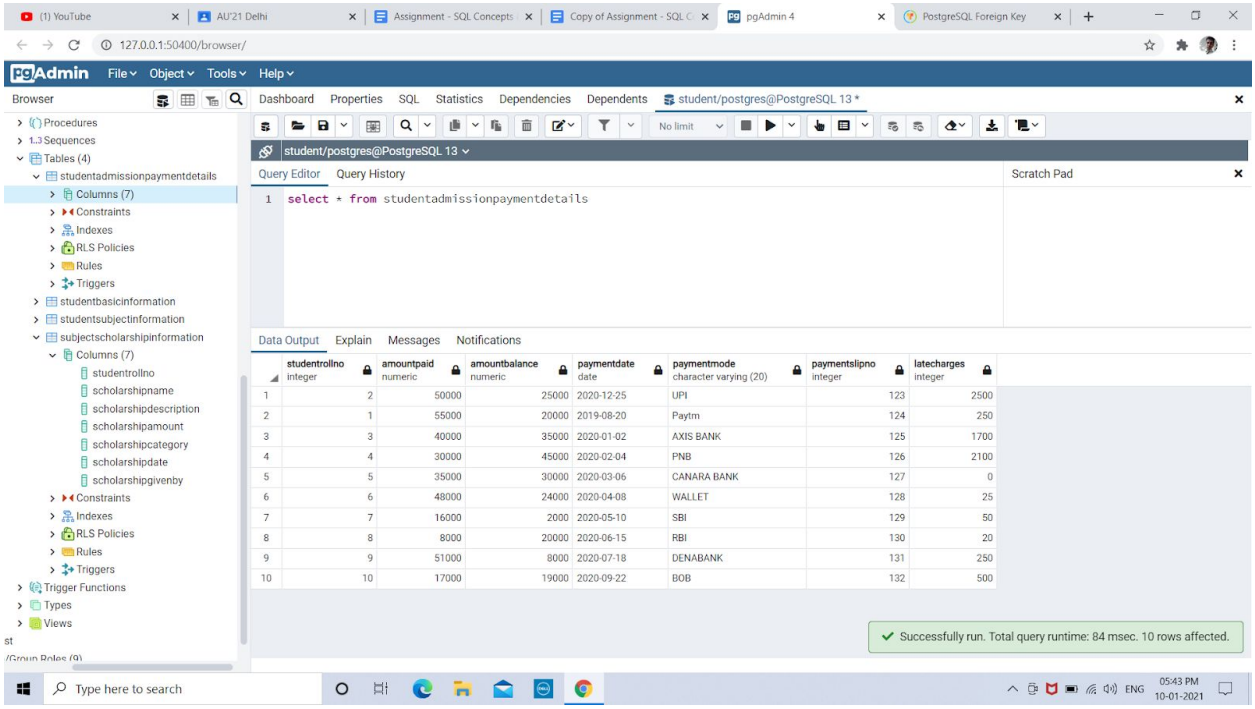
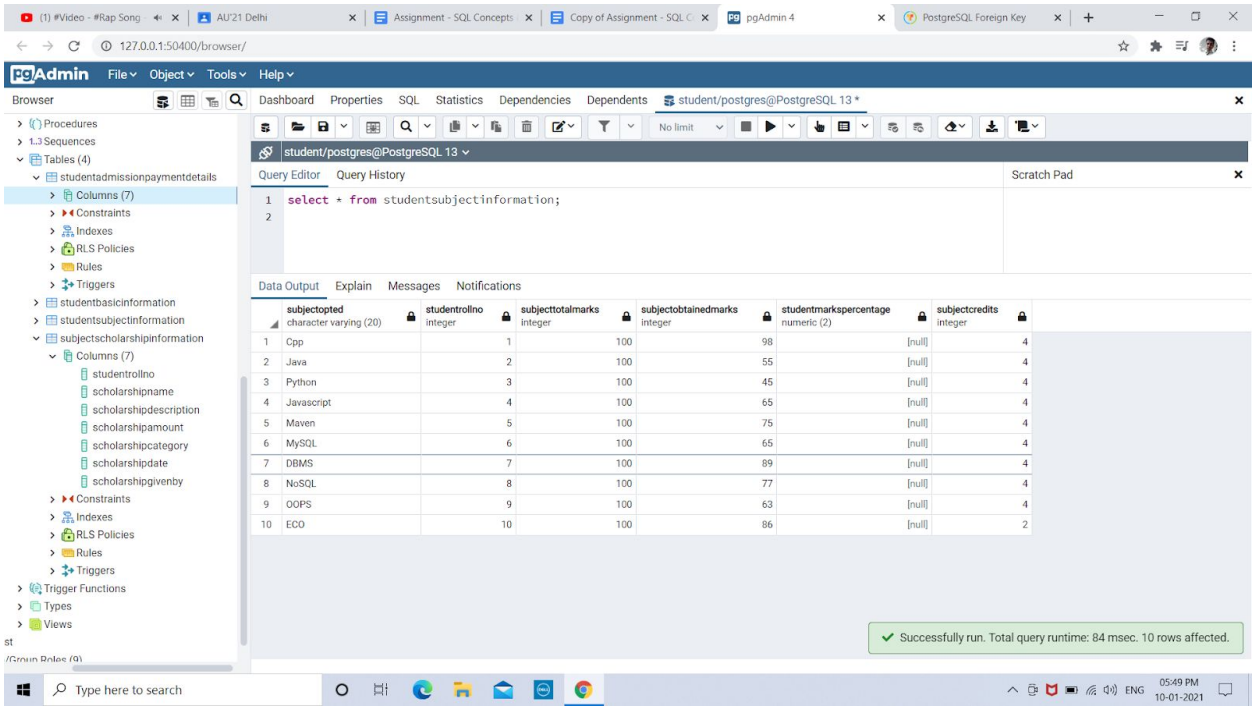


TABLE 3:

Query: insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('Cpp', 1, 100, 98, 4);
insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('Java', 2, 100, 55, 4);
insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('Python', 3, 100, 45, 4);
insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('Javascript', 4, 100, 65, 4);
insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('Maven', 5, 100, 75, 4);
insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('MySQL', 6, 100, 65, 4);
insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('DBMS', 7, 100, 89, 4);
insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('NoSQL', 8, 100, 77, 4);
insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('OOPS', 9, 100, 63, 4);
insert into StudentSubjectInformation
(SubjectOpted, StudentRollNo, SubjectTotalMarks, SubjectObtainedMarks, SubjectCredits)
values('ECO', 10, 100, 86, 2);

Screen Shot:



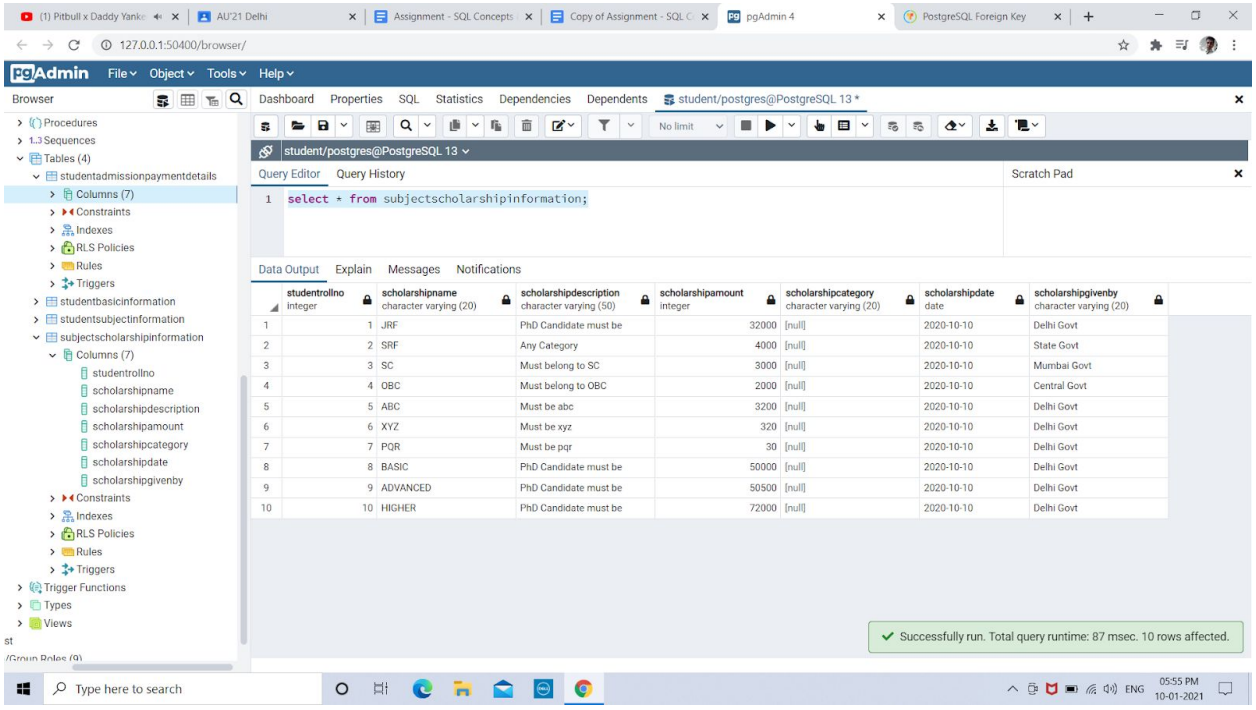
	subjectopted character varying (20)	studentrollno integer	subjecttotalmarks integer	subjectobtainedmarks integer	studentmarkspercentage numeric (2)	subjectcredits integer
1	Cpp	1	100	98	[null]	4
2	Java	2	100	55	[null]	4
3	Python	3	100	45	[null]	4
4	Javascript	4	100	65	[null]	4
5	Maven	5	100	75	[null]	4
6	MySQL	6	100	65	[null]	4
7	DBMS	7	100	89	[null]	4
8	NoSQL	8	100	77	[null]	4
9	OOPS	9	100	63	[null]	4
10	ECO	10	100	86	[null]	2

TABLE 4:

Query: insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount, ScholarshipDate, ScholarshipGivenBy)
values(1, 'JRF', 'PhD Candidate must be', 32000, '10-10-2020', 'Delhi Govt');
insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount, ScholarshipDate, ScholarshipGivenBy)
values(2, 'SRF', 'Any Category', 4000, '10-10-2020', 'State Govt');
insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount, ScholarshipDate, ScholarshipGivenBy)
values(3, 'SC', 'Must belong to SC', 3000, '10-10-2020', 'Mumbai Govt');
insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount, ScholarshipDate, ScholarshipGivenBy)
values(4, 'OBC', 'Must belong to OBC', 2000, '10-10-2020', 'Central Govt');
insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount, ScholarshipDate, ScholarshipGivenBy)
values(5, 'ABC', 'Must be abc', 3200, '10-10-2020', 'Delhi Govt');

```
insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount,
ScholarshipDate, ScholarshipGivenBy)
values(6, 'XYZ', 'Must be xyz', 320, '10-10-2020', 'Delhi Govt');
insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount,
ScholarshipDate, ScholarshipGivenBy)
values(7, 'PQR', 'Must be pqr', 30, '10-10-2020', 'Delhi Govt');
insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount,
ScholarshipDate, ScholarshipGivenBy)
values(8, 'BASIC', 'PhD Candidate must be', 50000, '10-10-2020', 'Delhi Govt');
insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount,
ScholarshipDate, ScholarshipGivenBy)
values(9, 'ADVANCED', 'PhD Candidate must be', 50500, '10-10-2020', 'Delhi Govt');
insert into SubjectScholarshipInformation
(StudentRollNo, ScholarshipName, ScholarshipDescription, ScholarshipAmount,
ScholarshipDate, ScholarshipGivenBy)
values(10, 'HIGHER', 'PhD Candidate must be', 72000, '10-10-2020', 'Delhi Govt');
```

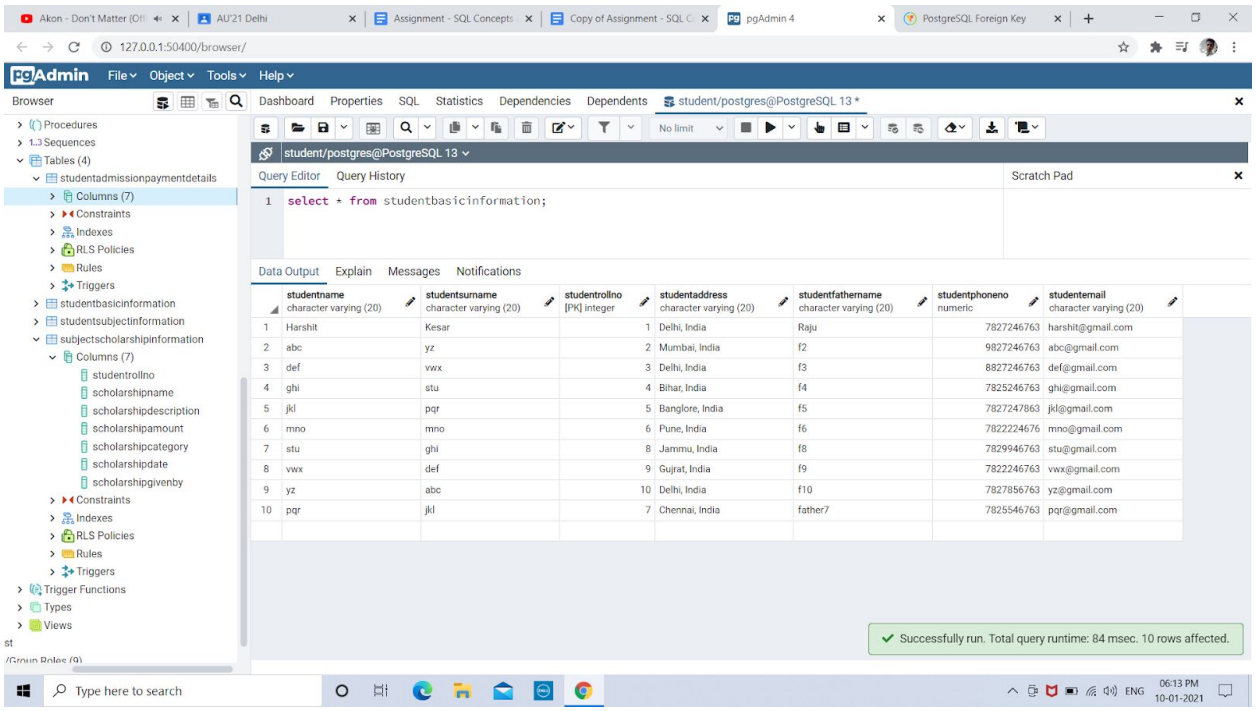
Screen Shot:



5. **Update any 5 records of your choice in any table like update the StudentAddress with some other address content and likewise so on with any records of any table of your choice**

Query: update StudentBasicInformation set StudentFatherName = 'father7' where StudentRollNo = 7;

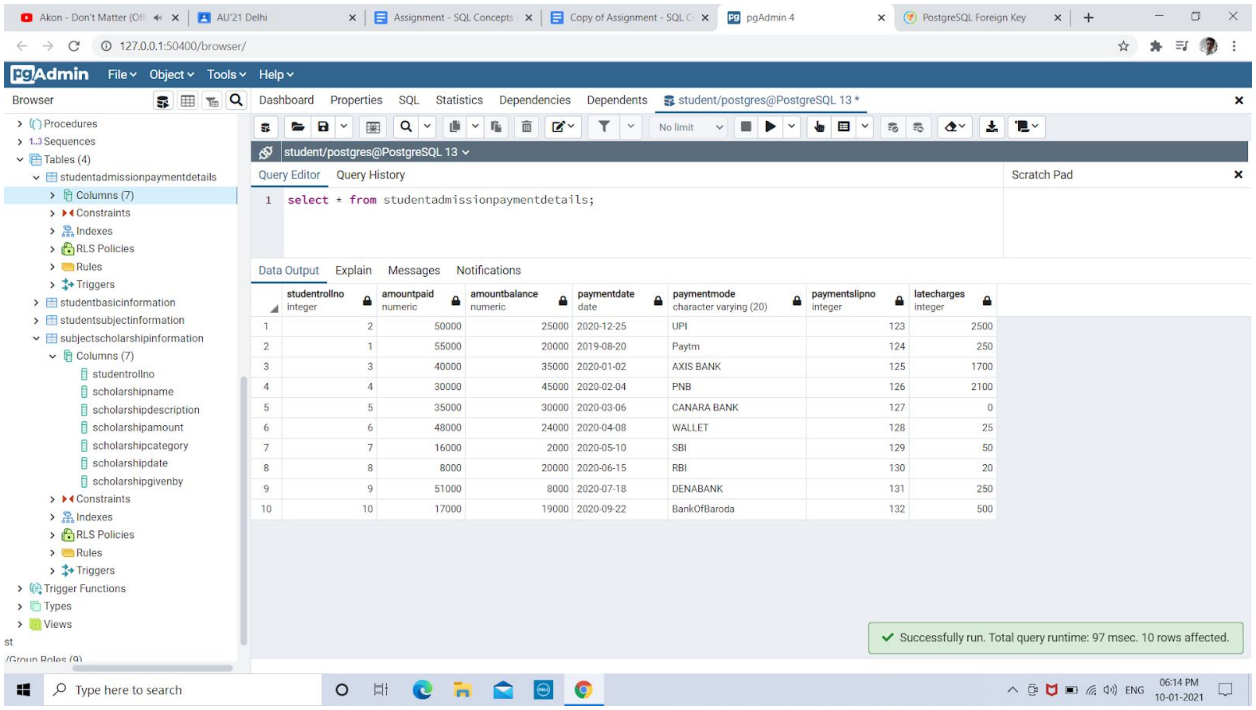
Screen Shot:



	studentname character varying (20)	studentsurname character varying (20)	studentrollno [PK] integer	studentaddress character varying (20)	studentfathername character varying (20)	studentphoneno numeric	studentemail character varying (20)
1	Harshit	Kesar	1	Delhi, India	Raju	7827246763	harshit@gmail.com
2	abc	yz	2	Mumbai, India	f2	9827246763	abc@gmail.com
3	def	vwx	3	Delhi, India	f3	8827246763	def@gmail.com
4	ghi	stu	4	Bihar, India	f4	7825246763	ghi@gmail.com
5	jkl	pqr	5	Banglore, India	f5	7827247863	jkl@gmail.com
6	mno	mno	6	Pune, India	f6	7822224676	mno@gmail.com
7	stu	ghi	8	Jammu, India	f8	7829946763	stu@gmail.com
8	vwx	def	9	Gujrat, India	f9	7822246763	vwx@gmail.com
9	yz	abc	10	Delhi, India	f10	7827856763	yz@gmail.com
10	pqr	jkl	7	Chennai, India	father7	7825546763	pqr@gmail.com

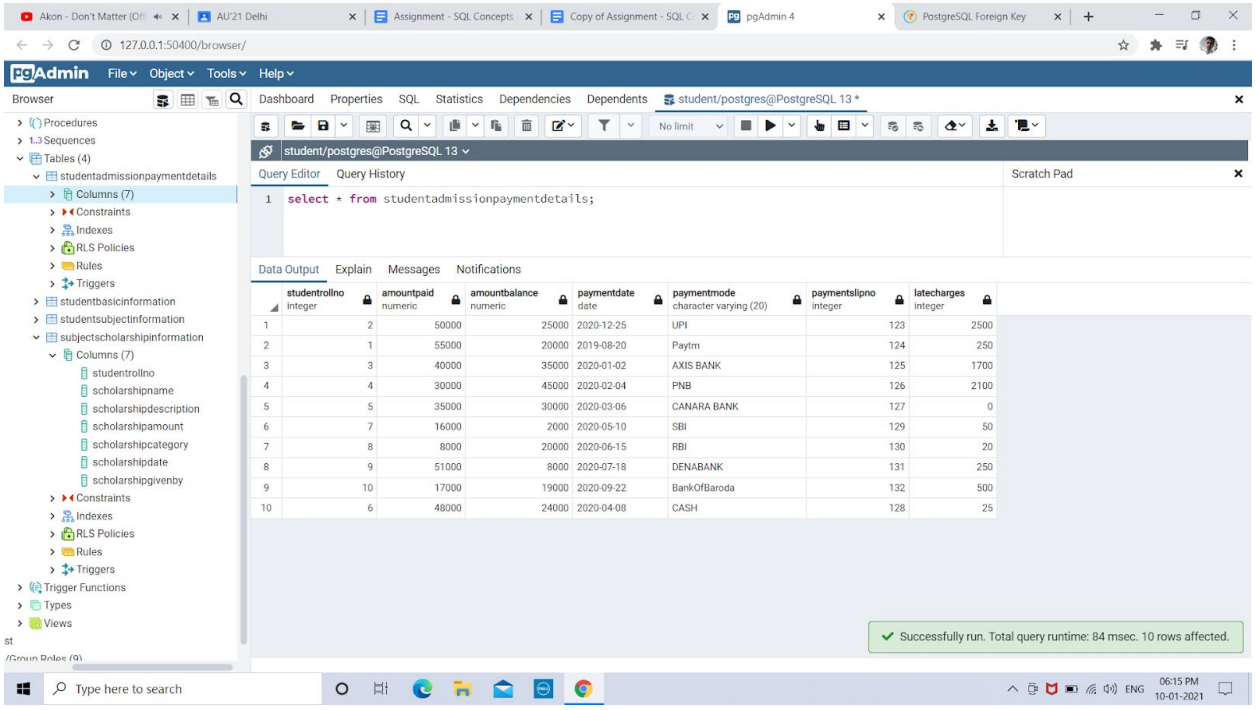
Query: update StudentAdmissionPaymentDetails set PaymentMode = 'BankOfBaroda' where PaymentMode = 'BOB';

Screen Shot:



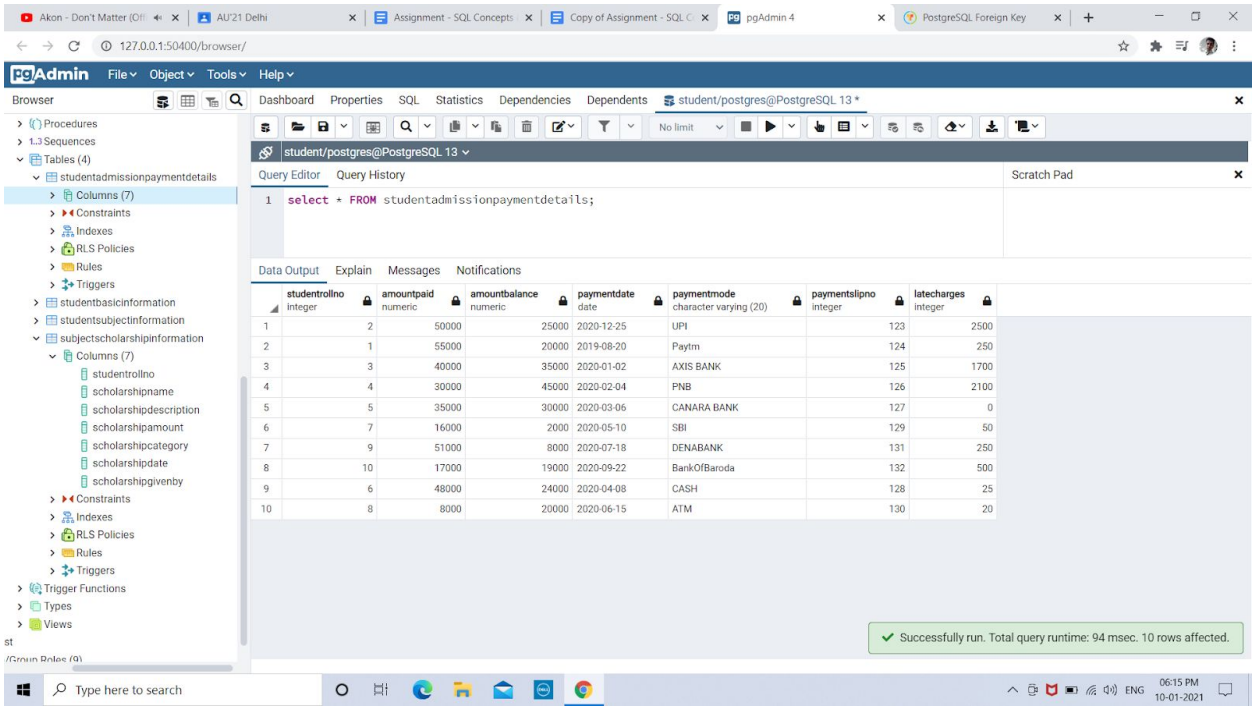
Query: update StudentAdmissionPaymentDetails set PaymentMode = 'CASH' where PaymentMode = 'WALLET';

Screen Shot:



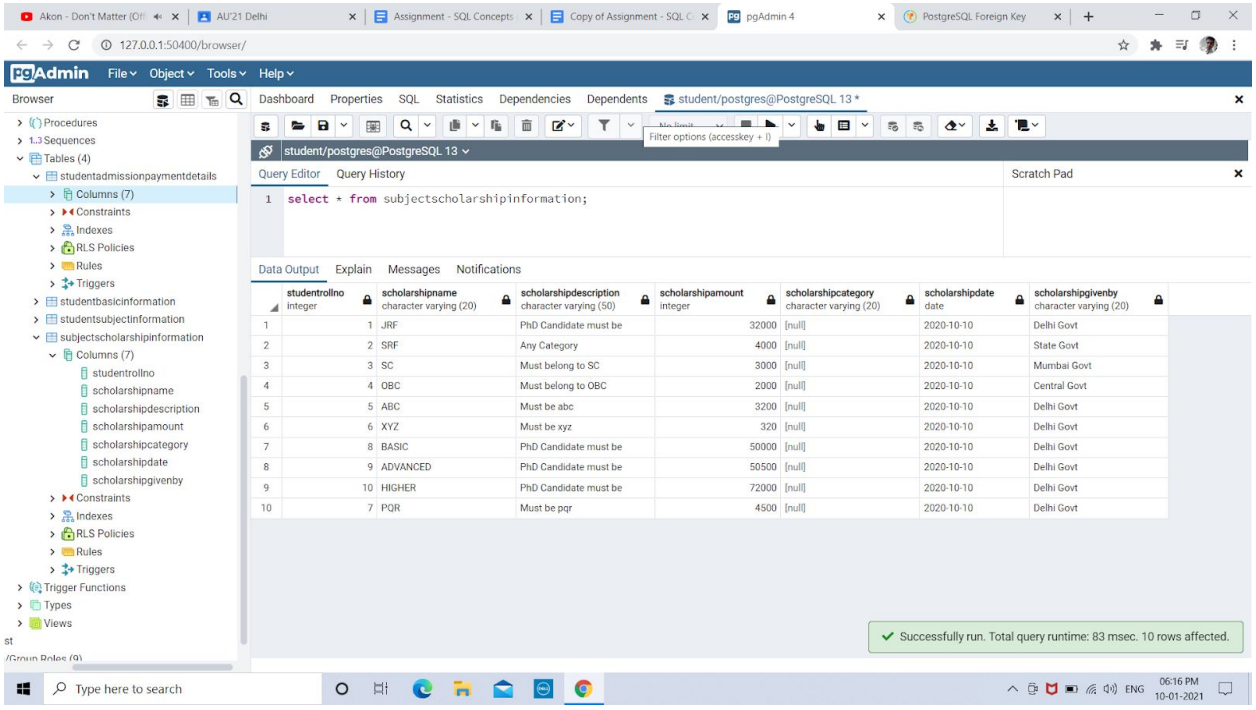
Query: update StudentAdmissionPaymentDetails set PaymentMode = 'ATM' where PaymentMode = 'RBI';

Screen Shot:



Query: update SubjectScholarshipInformation set ScholarshipAmount = 4500 where StudentRollNo = 7;

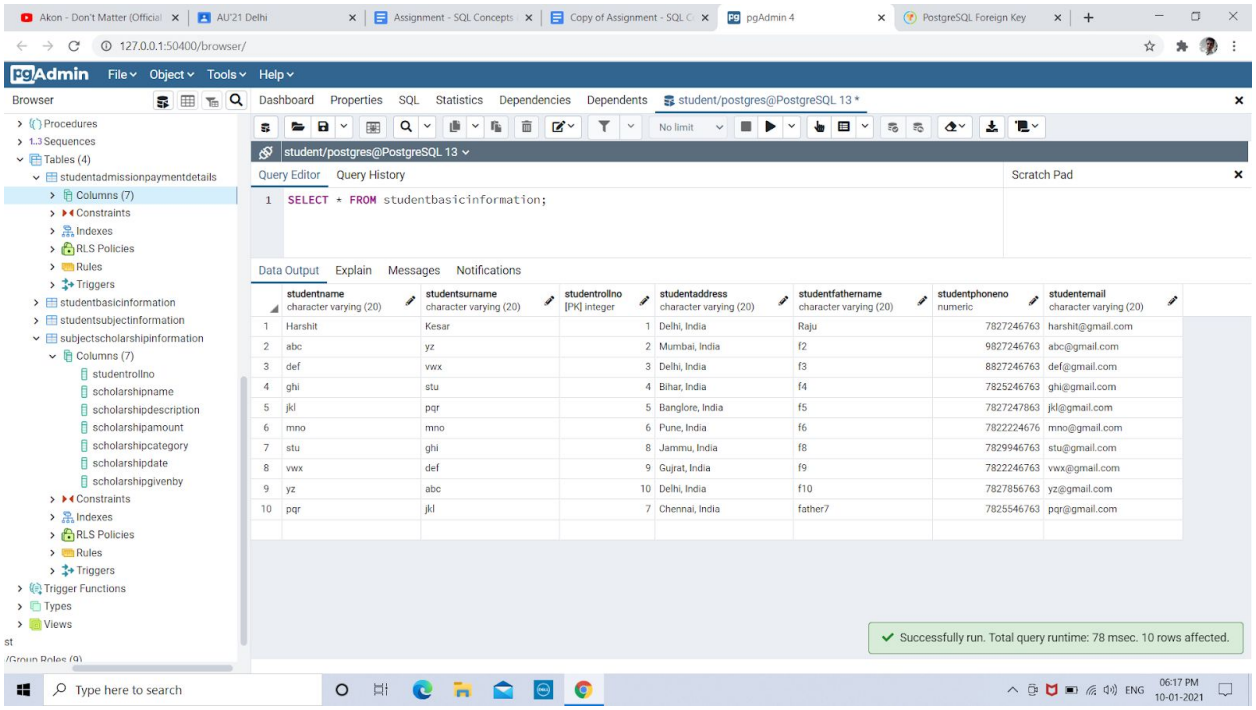
Screen Shot:



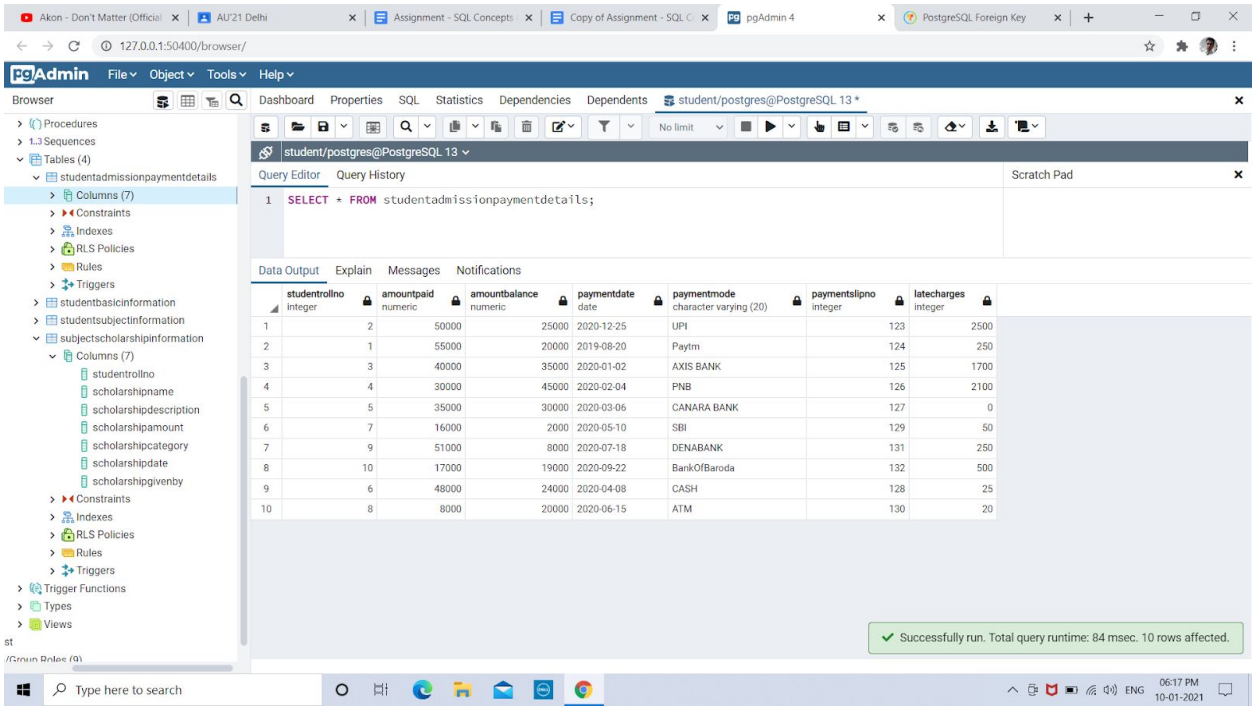
6. **Snap of the all the tables post updation**

Query:

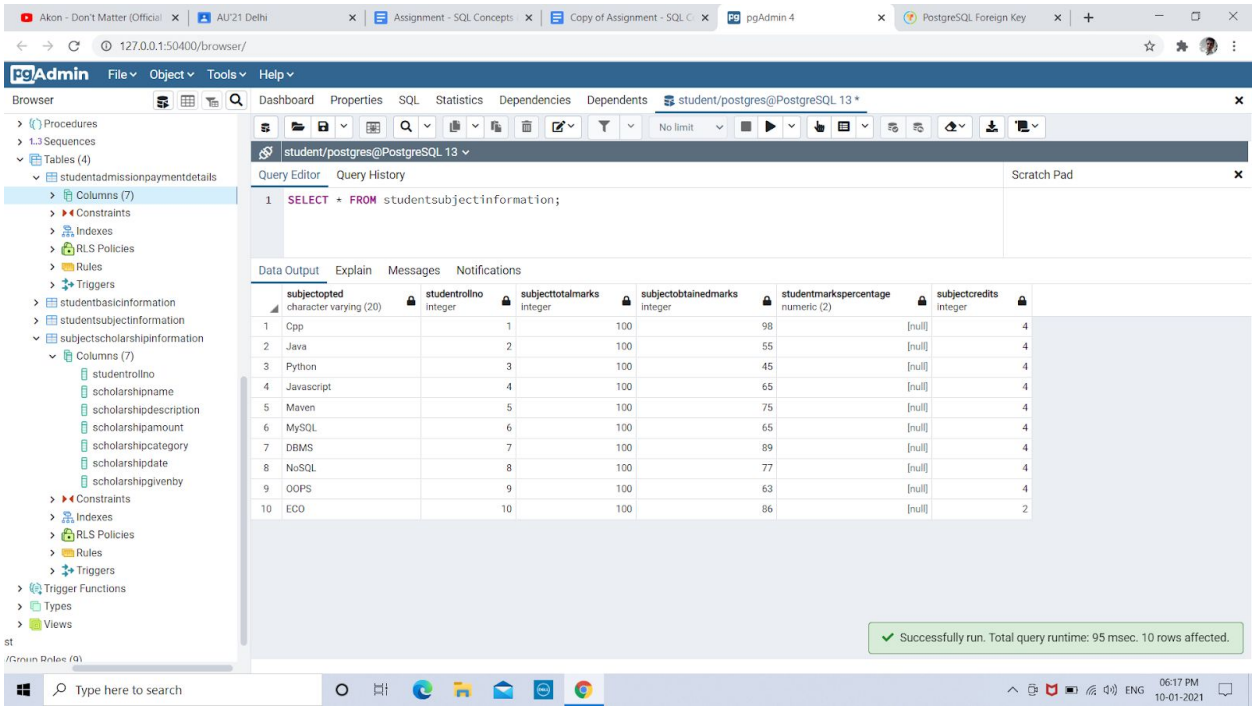
Screen Shot:

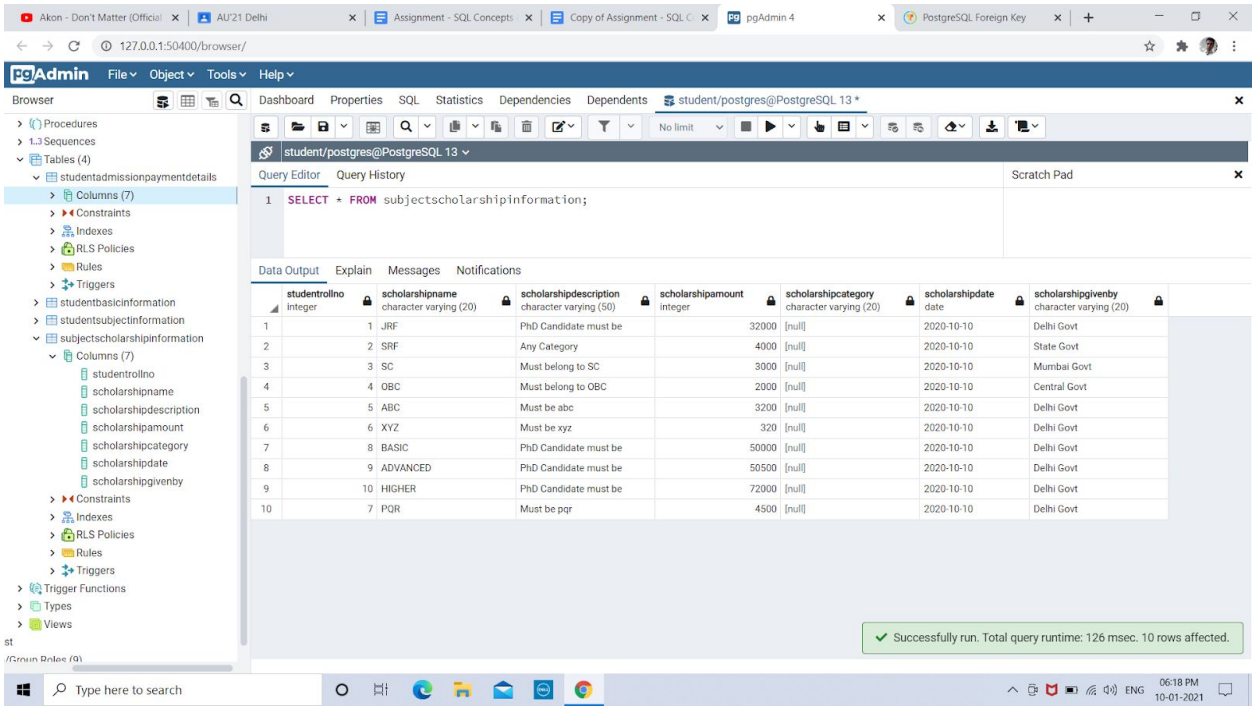


	studentname character varying (20)	studentsurname character varying (20)	studentrollno [PK] integer	studentaddress character varying (20)	studentfathername character varying (20)	studentphoneno numeric	studentemail character varying (20)
1	Harshit	Kesar	1	Delhi, India	Raju	7827246763	harshit@gmail.com
2	abc	yz	2	Mumbai, India	f2	9827246763	abc@gmail.com
3	def	vwx	3	Delhi, India	f3	8827246763	def@gmail.com
4	ghi	stu	4	Bihar, India	f4	7825246763	ghi@gmail.com
5	jkl	pqr	5	Banglore, India	f5	7827247863	jkl@gmail.com
6	mno	mno	6	Pune, India	f6	7822224676	mno@gmail.com
7	stu	ghi	8	Jammu, India	f8	7829946763	stu@gmail.com
8	vwx	def	9	Gujrat, India	f9	7822246763	vwx@gmail.com
9	yz	abc	10	Delhi, India	f10	7827856763	yz@gmail.com
10	pqr	jkl	7	Chennai, India	father7	7825546763	pqr@gmail.com



	studentrollno integer	amountpaid numeric	amountbalance numeric	paymentdate date	paymentmode character varying (20)	paymentslipno integer	latecharges integer
1	2	50000	25000	2020-12-25	UPI	123	2500
2	1	55000	20000	2019-08-20	Paytm	124	250
3	3	40000	35000	2020-01-02	AXIS BANK	125	1700
4	4	30000	45000	2020-02-04	PNB	126	2100
5	5	35000	30000	2020-03-06	CANARA BANK	127	0
6	7	16000	2000	2020-05-10	SBI	129	50
7	9	51000	8000	2020-07-18	DENABANK	131	250
8	10	17000	19000	2020-09-22	BankOfBaroda	132	500
9	6	48000	24000	2020-04-08	CASH	128	25
10	8	8000	20000	2020-06-15	ATM	130	20

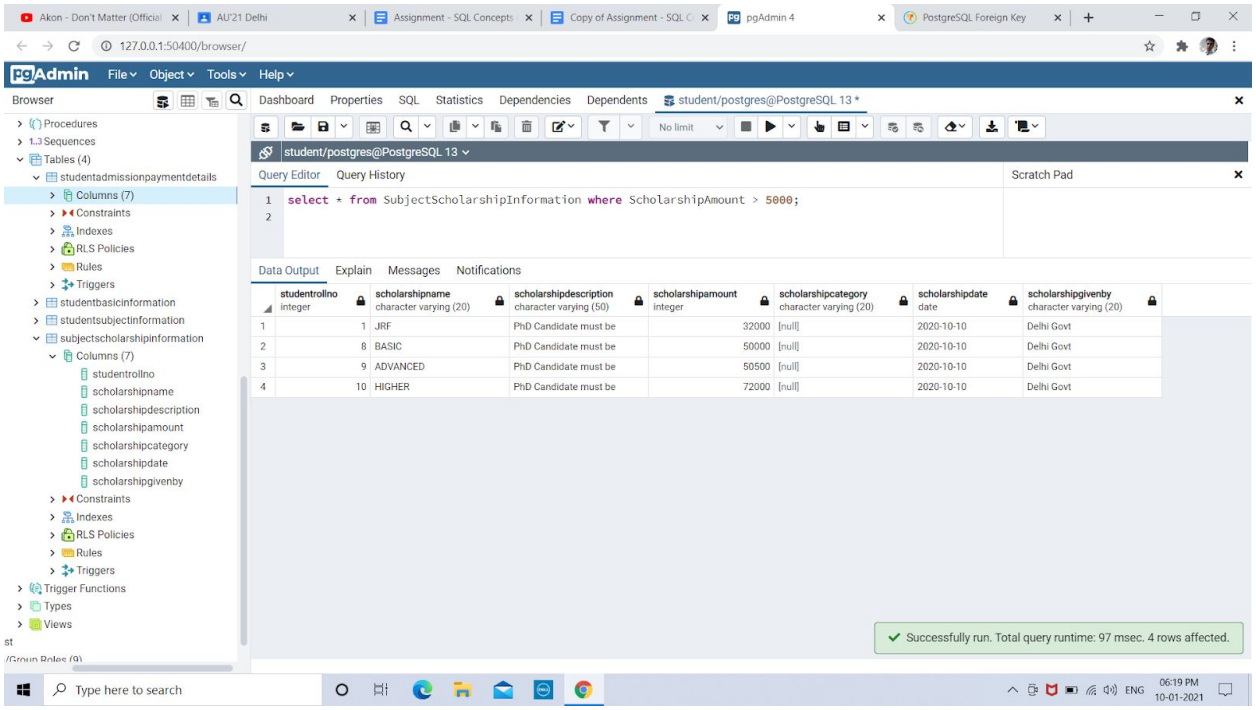




7. **Select the student details records who has received the scholarship more than 5000Rs/-**

Query: select * from SubjectScholarshipInformation where ScholarshipAmount > 5000;

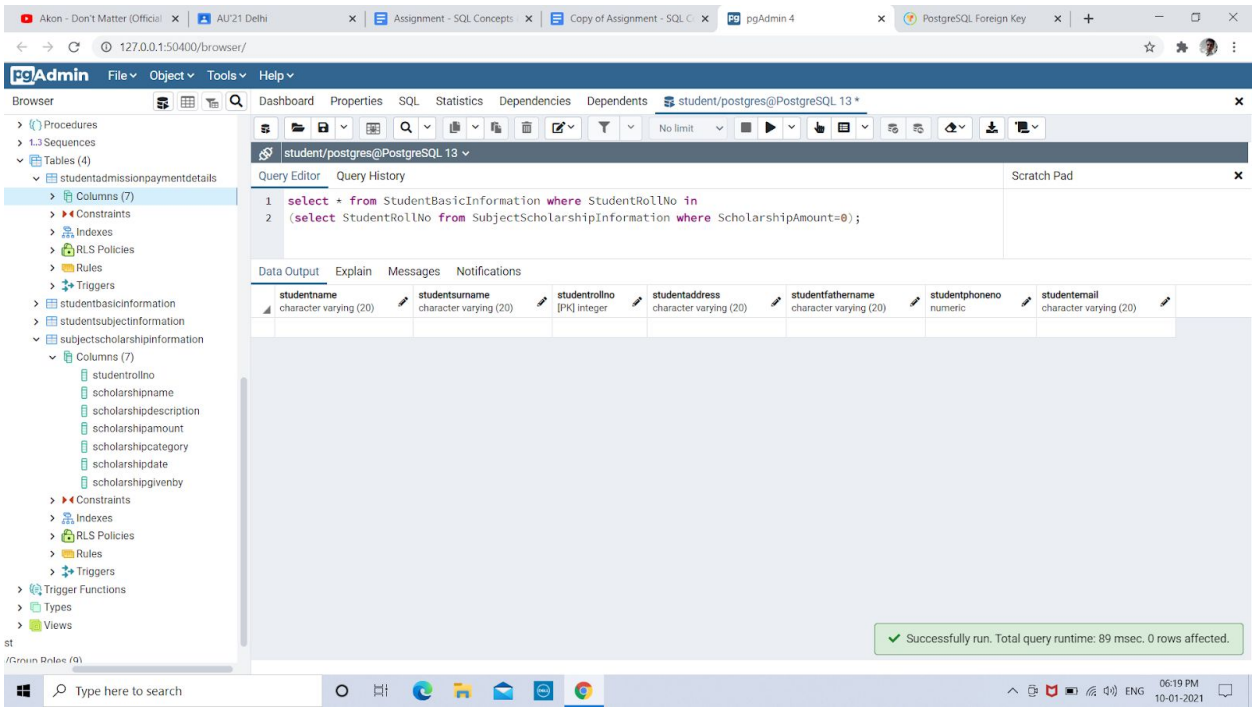
Screen Shot:



8. **Select the students who opted for scholarship but have not got the scholarship.**

Query: select * from StudentBasicInformation where StudentRollNo in(select StudentRollNo from SubjectScholarshipInformation where ScholarshipAmount=0);

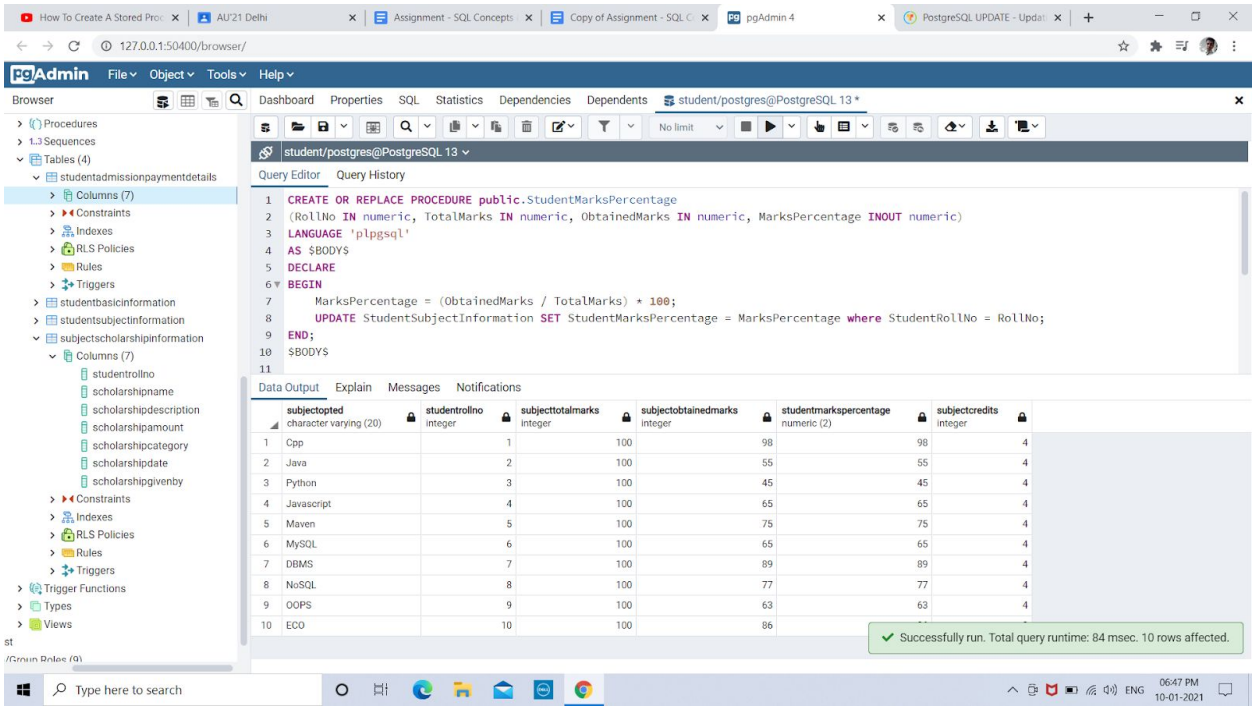
Screen Shot:



9. **Fill in data for the percentage column i.e. StudentMarksPercentage in the table StudentSubjectInformation by creating and using the stored procedure created.**

Query: CREATE OR REPLACE PROCEDURE public.StudentMarksPercentage
(RollNo IN numeric, TotalMarks IN numeric, ObtainedMarks IN numeric, MarksPercentage INOUT numeric)
LANGUAGE 'plpgsql'
AS $BODY$
DECLARE
BEGIN
MarksPercentage = (ObtainedMarks / TotalMarks) * 100;
UPDATE StudentSubjectInformation SET StudentMarksPercentage = MarksPercentage where StudentRollNo = RollNo;
END;
$BODY$

Screen Shot:



	subjectopted	studentrollno	subjecttotalmarks	subjectobtainedmarks	studentmarkspercentage	subjectcredits
1	Cpp	1	100	98	98	4
2	Java	2	100	55	55	4
3	Python	3	100	45	45	4
4	Javascript	4	100	65	65	4
5	Maven	5	100	75	75	4
6	MySQL	6	100	65	65	4
7	DBMS	7	100	89	89	4
8	NoSQL	8	100	77	77	4
9	OOPS	9	100	63	63	4
10	ECO	10	100	86		

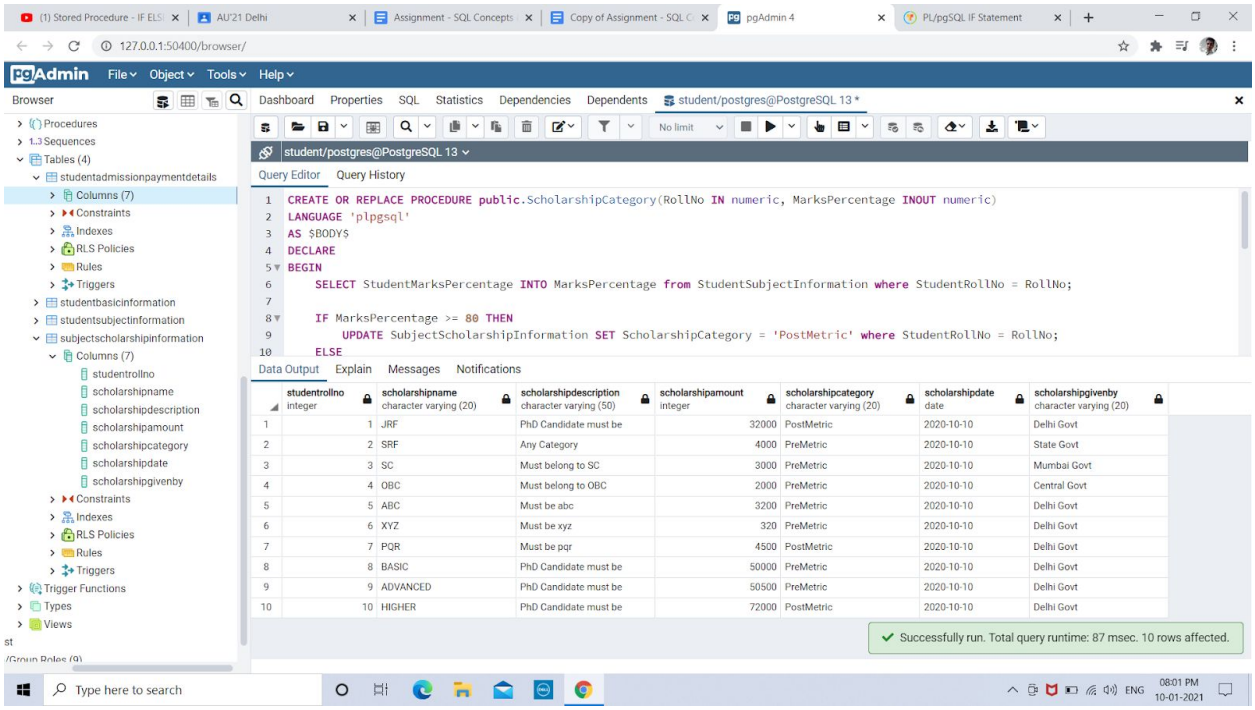
10. **Decide the category of the scholarship depending upon the marks/percentage obtained by the student and likewise update the ScholarshipCategory column, create a stored procedure in order to handle this operation.**

Query: CREATE OR REPLACE PROCEDURE public.ScholarshipCategory(RollNo IN numeric, MarksPercentage INOUT numeric)
LANGUAGE 'plpgsql'

```
AS $BODY$
DECLARE
BEGIN
	SELECT StudentMarksPercentage INTO MarksPercentage from
StudentSubjectInformation where StudentRollNo = RollNo;

	IF MarksPercentage >= 80 THEN
		UPDATE SubjectScholarshipInformation SET ScholarshipCategory =
'PostMetric' where StudentRollNo = RollNo;
	ELSE
		UPDATE SubjectScholarshipInformation SET ScholarshipCategory = 'PreMetric'
where StudentRollNo = RollNo;
	END IF;
END;
$BODY$
```

Screen Shot:



studentrollno integer	scholarshipname character varying (20)	scholarshipdescription character varying (50)	scholarshipamount integer	scholarshipcategory character varying (20)	scholarshipdate date	scholarshipgivenby character varying (20)
1	JRF	PhD Candidate must be	32000	PostMetric	2020-10-10	Delhi Govt
2	SRF	Any Category	4000	PreMetric	2020-10-10	State Govt
3	SC	Must belong to SC	3000	PreMetric	2020-10-10	Mumbai Govt
4	OBC	Must belong to OBC	2000	PreMetric	2020-10-10	Central Govt
5	ABC	Must be abc	3200	PreMetric	2020-10-10	Delhi Govt
6	XYZ	Must be xyz	320	PreMetric	2020-10-10	Delhi Govt
7	PQR	Must be pqr	4500	PostMetric	2020-10-10	Delhi Govt
8	BASIC	PhD Candidate must be	50000	PreMetric	2020-10-10	Delhi Govt
9	ADVANCED	PhD Candidate must be	50500	PreMetric	2020-10-10	Delhi Govt
10	HIGHER	PhD Candidate must be	72000	PostMetric	2020-10-10	Delhi Govt

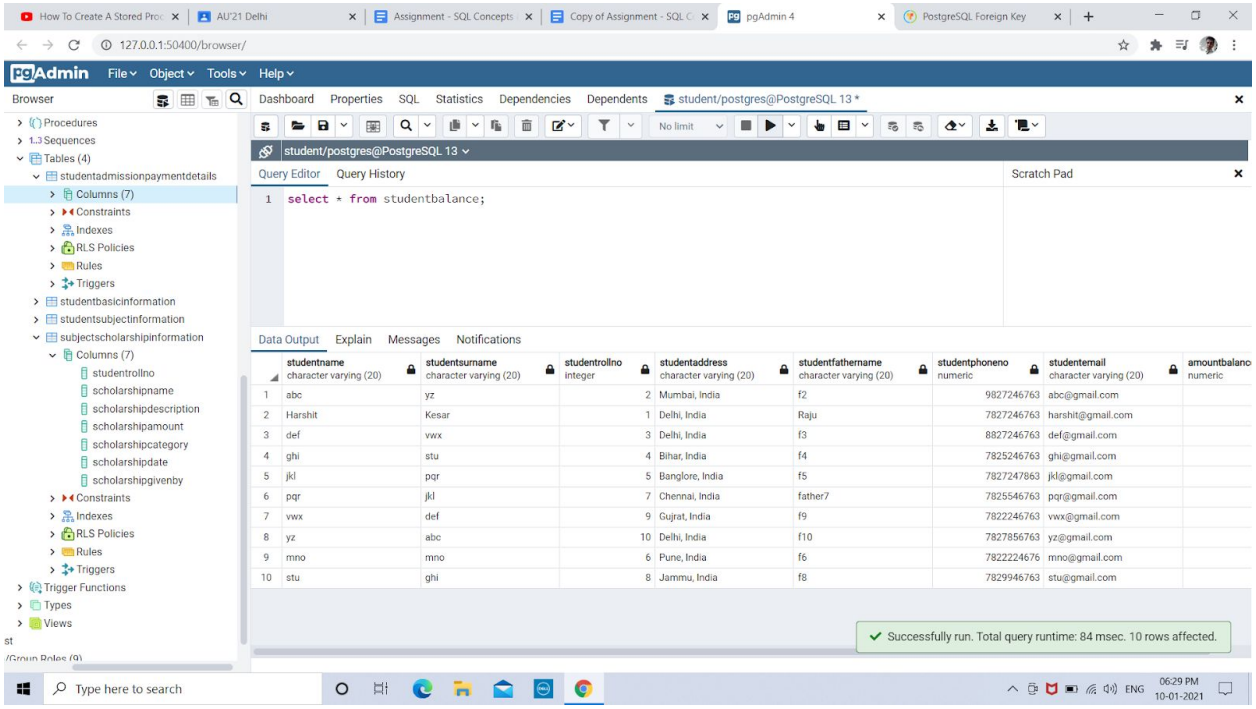
11. Create the View which shows the balance amount to be paid by the student along with the student detailed information (use join).

Query: CREATE MATERIALIZED VIEW StudentBalance
AS SELECT StudentName, StudentSurname, SBInfo.StudentRollNo, StudentAddress, StudentFatherName, StudentPhoneNo, StudentEmail, AmountBalance

FROM (StudentBasicInformation SBInfo JOIN StudentAdmissionPaymentDetails SAPD ON (SBInfo.StudentRollNo = SAPD.StudentRollNo));

SELECT * FROM StudentBalance;

Screen Shot:

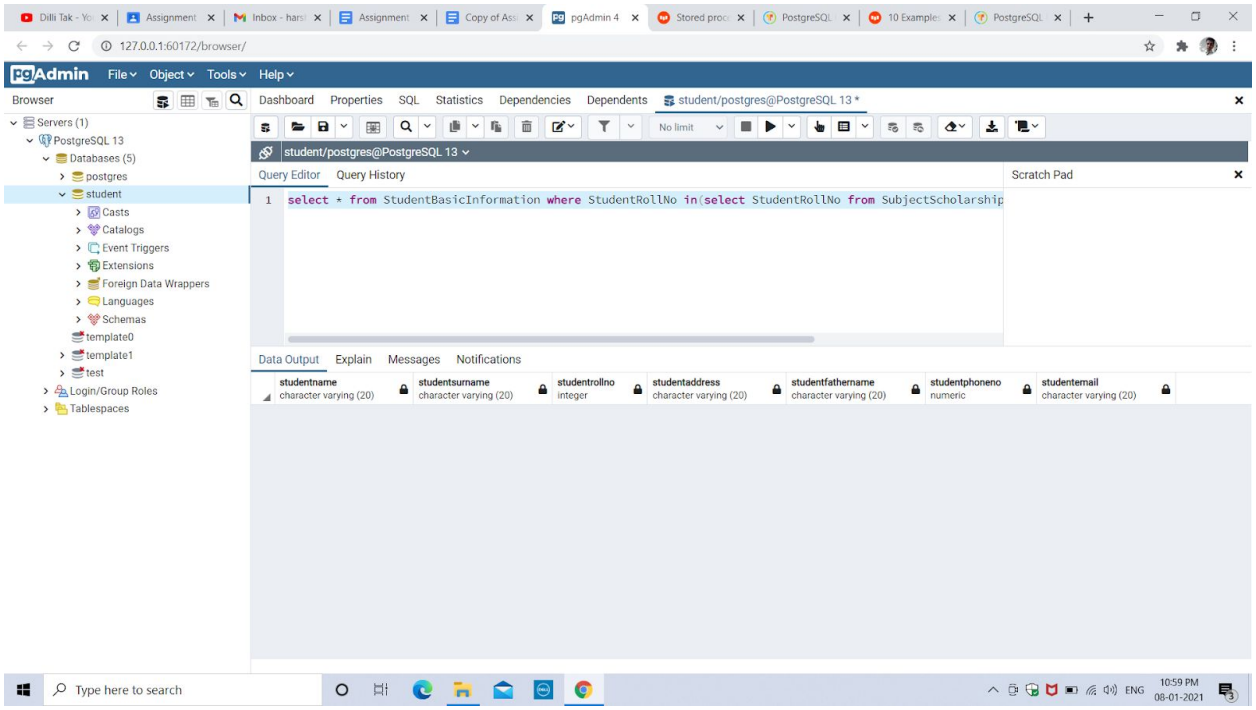


	studentname	studentsurname	studentrollno	studentaddress	studentfathername	studentphoneno	studentemail	amountbalanc
	character varying (20)	character varying (20)	integer	character varying (20)	character varying (20)	numeric	character varying (20)	numeric
1	abc	yz	2	Mumbai, India	f2	9827246763	abc@gmail.com	
2	Harshit	Kesar	1	Delhi, India	Raju	7827246763	harshit@gmail.com	
3	def	vwx	3	Delhi, India	f3	8827246763	def@gmail.com	
4	ghi	stu	4	Bihar, India	f4	7825246763	ghi@gmail.com	
5	jkl	pqr	5	Banglore, India	f5	7827247863	jkl@gmail.com	
6	pqr	jkl	7	Chennai, India	father7	7825546763	pqr@gmail.com	
7	vwx	def	9	Gujrat, India	f9	7822246763	vwx@gmail.com	
8	yz	abc	10	Delhi, India	f10	7827856763	yz@gmail.com	
9	mno	mno	6	Pune, India	f6	7822224676	mno@gmail.com	
10	stu	ghi	8	Jammu, India	f8	7829946763	stu@gmail.com	

12. **Get the details of the students who haven't got any scholarship (use joins/subqueries).**

Query: select * from StudentBasicInformation where StudentRollNo in(select StudentRollNo from SubjectScholarshipInformation where ScholarshipAmount=0);

Screen Shot:



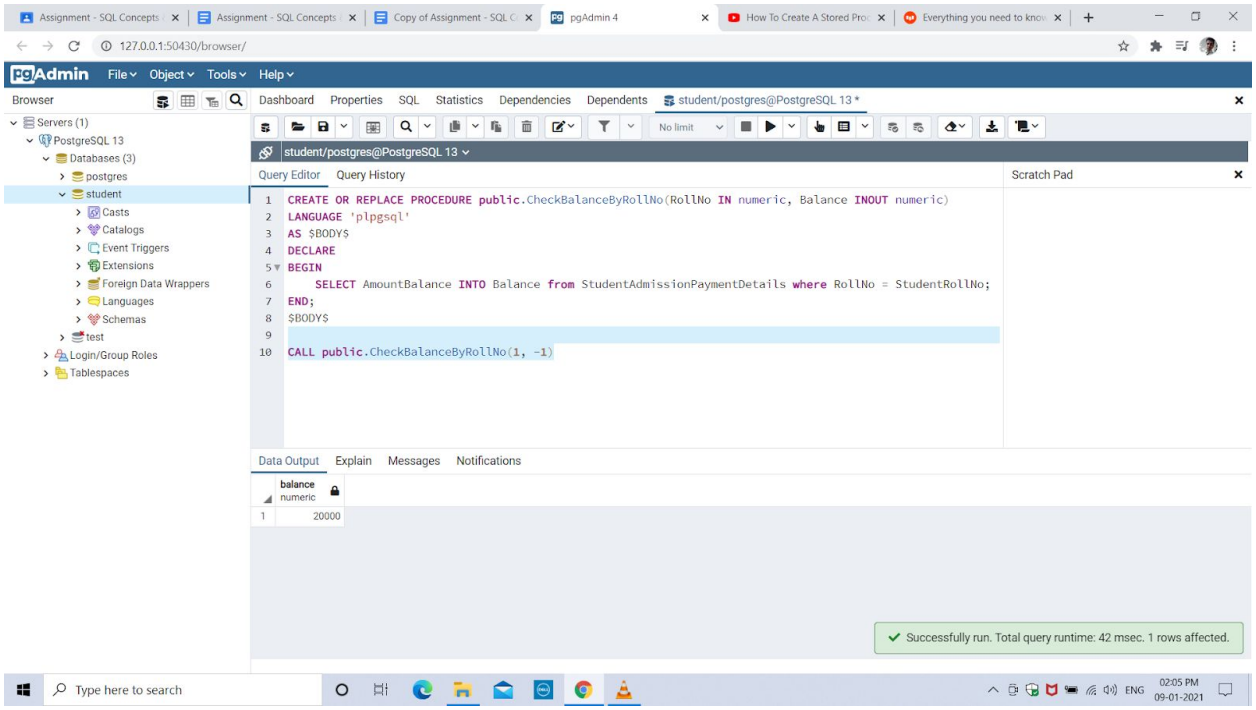
13. **Create a Stored Procedure which will return the amount balance to be paid by the student as per the student roll number passed through the stored procedure as the input.**

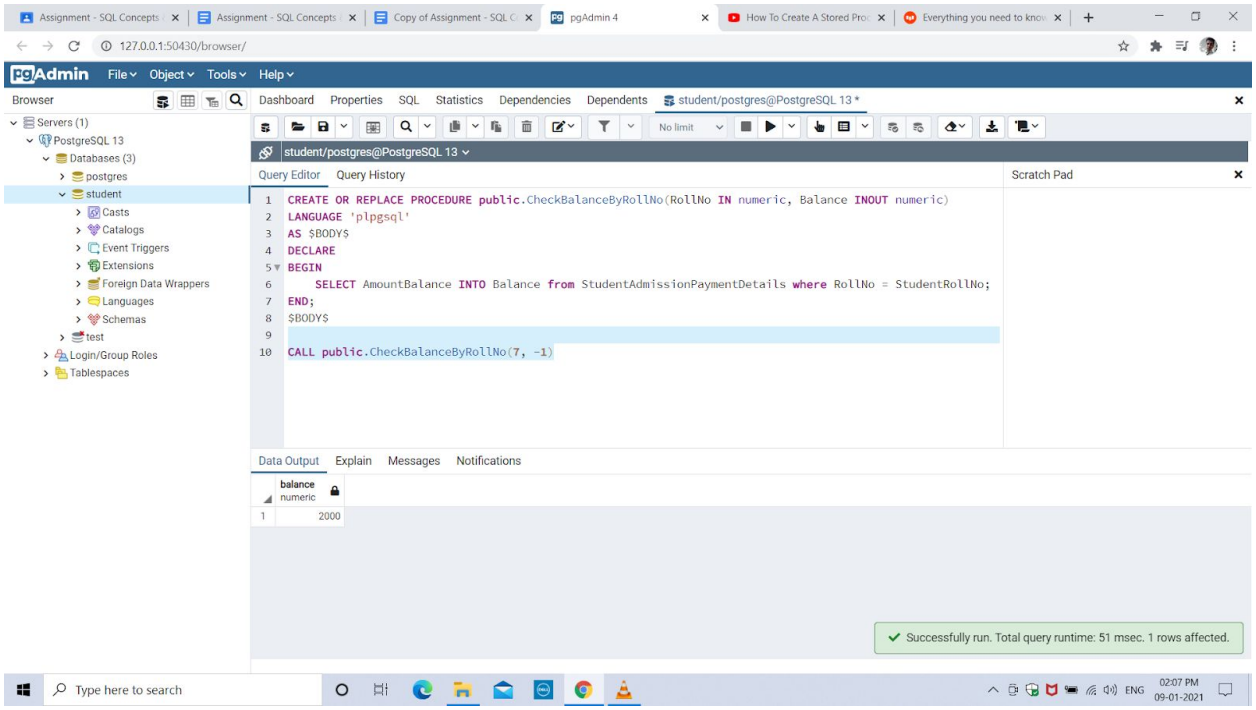
Query: CREATE OR REPLACE PROCEDURE public.CheckBalanceByRollNo(RollNo IN numeric, Balance INOUT numeric)
LANGUAGE 'plpgsql'
AS $BODY$
DECLARE
BEGIN
	SELECT AmountBalance INTO Balance from StudentAdmissionPaymentDetails where RollNo = StudentRollNo;
END;
$BODY$

CALL public.CheckBalanceByRollNo(1, -1)

CALL public.CheckBalanceByRollNo(7, -1)

Screen Shot:

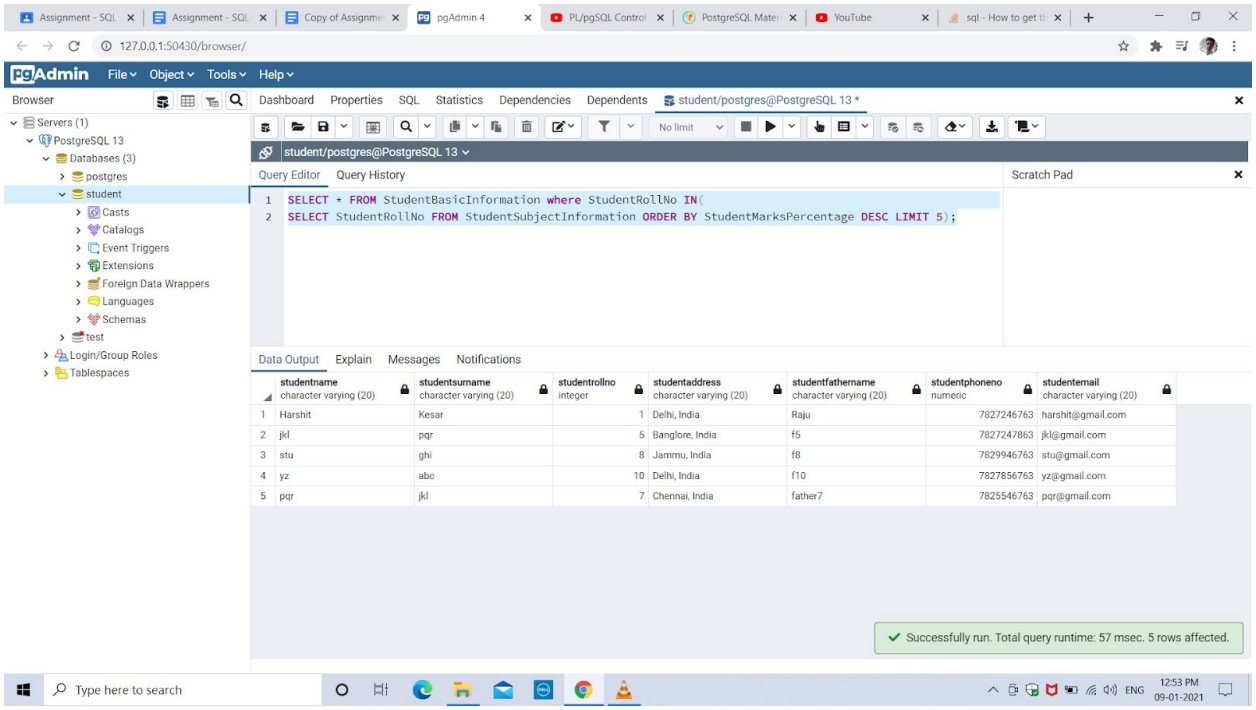




14. Retrieve the top five student details as per the StudentMarksPercentage values (use subqueries).

Query: SELECT * FROM StudentBasicInformation where StudentRollNo IN(SELECT StudentRollNo FROM StudentSubjectInformation ORDER BY StudentMarksPercentage DESC LIMIT 5);

Screen Shot:

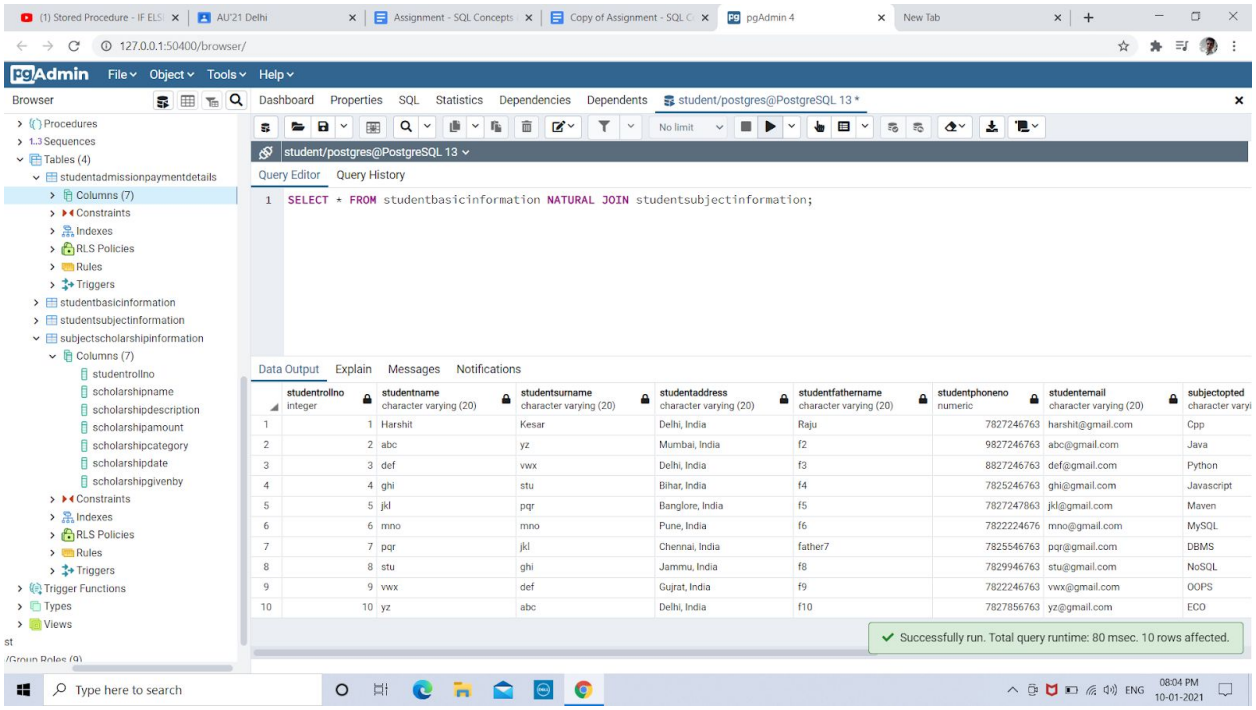


15. Try to use all the three types of join learned today in a relevant way, and explain the same why you thought of using that particular join for your selected scenarios (try to cover relevant and real time scenarios for all the three studied joins).

1. NATURAL JOIN :-

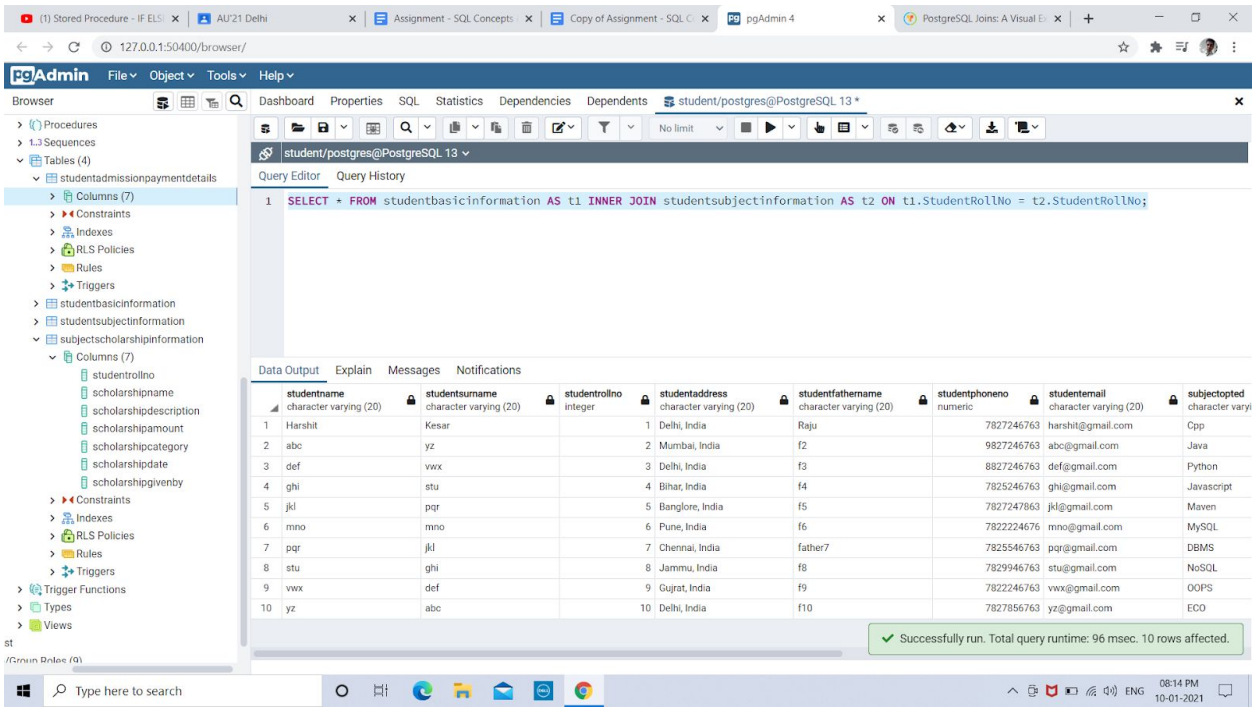
A natural join is a join that creates an implicit join based on the same column names in the joined tables.

Here, we can join the tables StudentBasicInformation with the StudentSubjectInformation as both of the tables contain the field StudentRollNo with the exact same name in both the tables. So, it automatically joins both tables on the basis of StudentRollNo field and generates 10 records as we could get on merging on using INNER JOIN query. For more information just see the SCREENSHOT below.



2. INNER JOIN : Here, we have to explicitly define the fields on which you want to merge 2 or more tables.

Remember here you will get all the fields of all the tables. Whereas in case of NATURAL JOIN you get the StudentRollNo field at once but here you get two times. For more information see the SCREENSHOT below.



3. LEFT OUTER JOIN : - To select rows from the left table that do not have matching rows in the right table, you use the left join with a where clause.

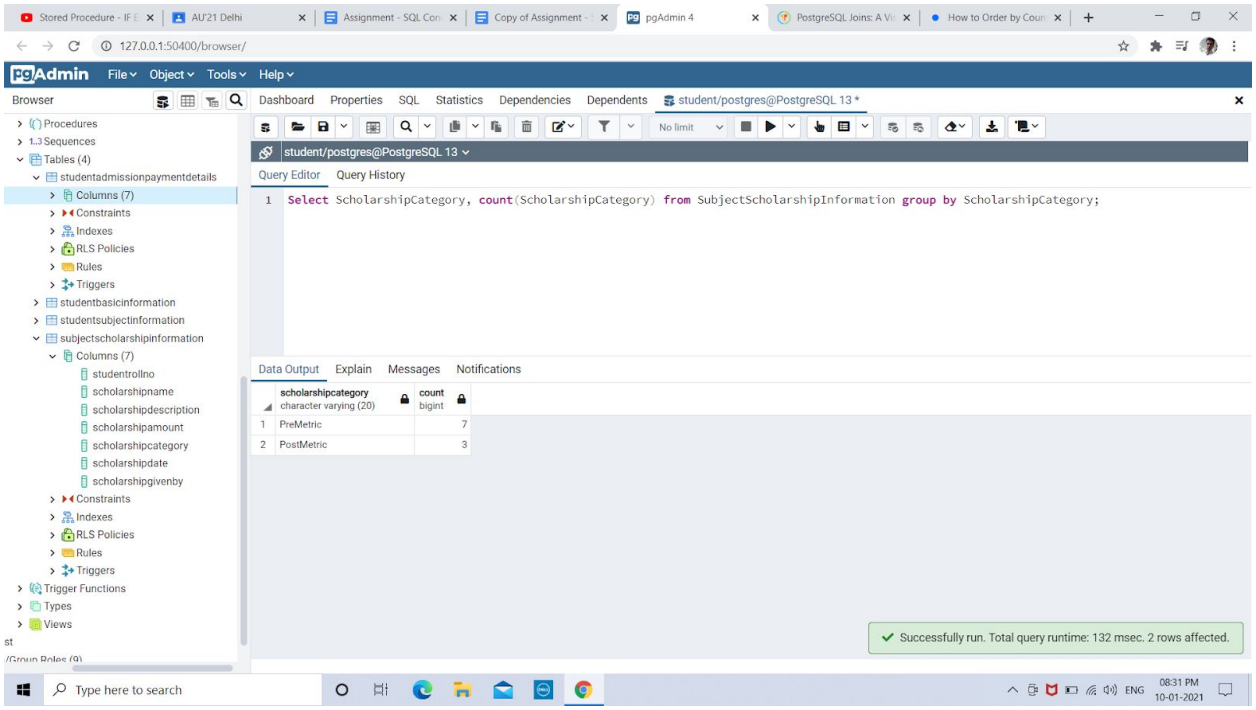
16. Mention the differences between the delete, drop and truncate commands.

Delete	Drop	Truncate
DML Command	DDL Command	DDL Command
It is used to delete the one or more tuples of a table.	It is used to drop the whole table.	It is used to delete all the rows of a relation (table) in one go. With the help of the "TRUNCATE" command we can't delete the single row as here WHERE clause is not used.
DELETE FROM table_name; (or) DELETE FROM table_name WHERE condition;	DROP TABLE table_name;	TRUNCATE table_name;
It is comparatively slower than TRUNCATE cmd.	By using this command the existence of the whole table is finished or lost.	It is comparatively faster than delete command as it deletes all the rows fastly.
Here we can use the "ROLLBACK" command to restore the tuple.	Here we can't restore the table by using the "ROLLBACK" command.	Here we can't restore the tuples of the table by using the "ROLLBACK" command.

17. Get the count of the Scholarship category which is highly been availed by the students, i.e. get the count of the total number of students corresponding to the each scholarships category.

Query: Select ScholarshipCategory, count(ScholarshipCategory) from SubjectScholarshipInformation group by ScholarshipCategory;

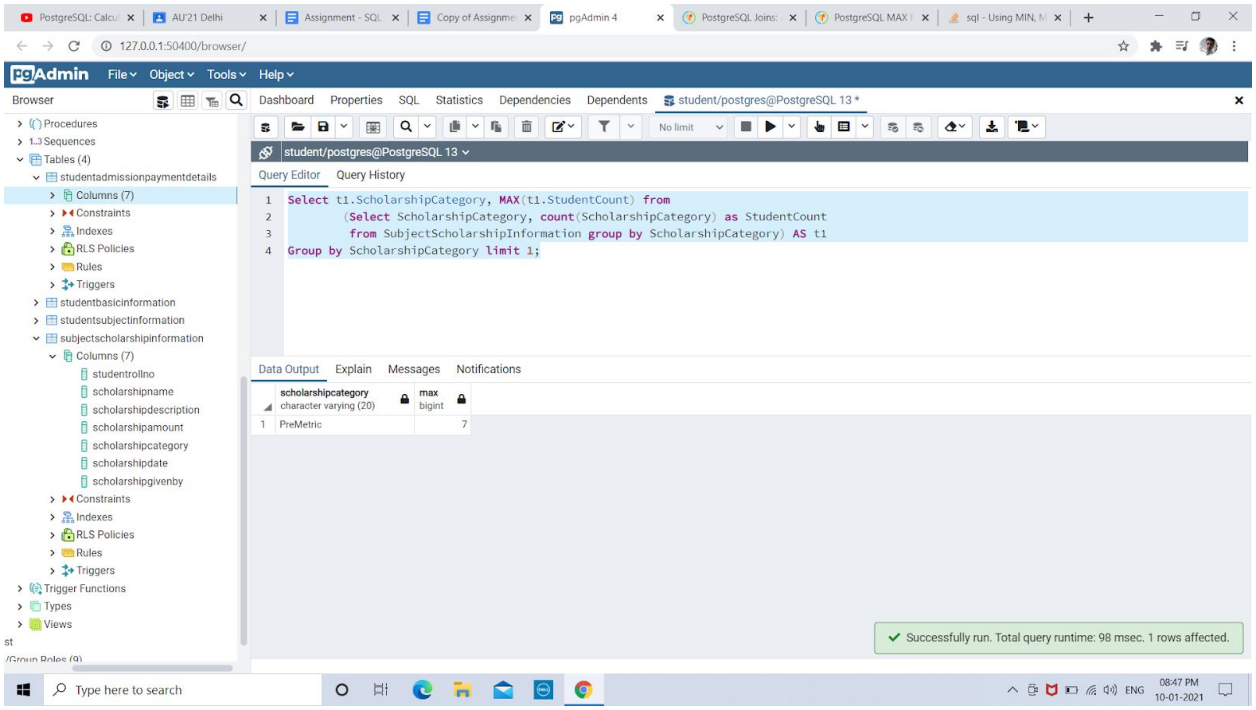
Screen Shot:



18. Along with the assignment no. 17 try to retrieve the maximum used scholarship category.

Query: Select t1.ScholarshipCategory, MAX(t1.StudentCount) from
(Select ScholarshipCategory, count(ScholarshipCategory) as StudentCount
from SubjectScholarshipInformation group by ScholarshipCategory) AS t1
Group by ScholarshipCategory limit 1;

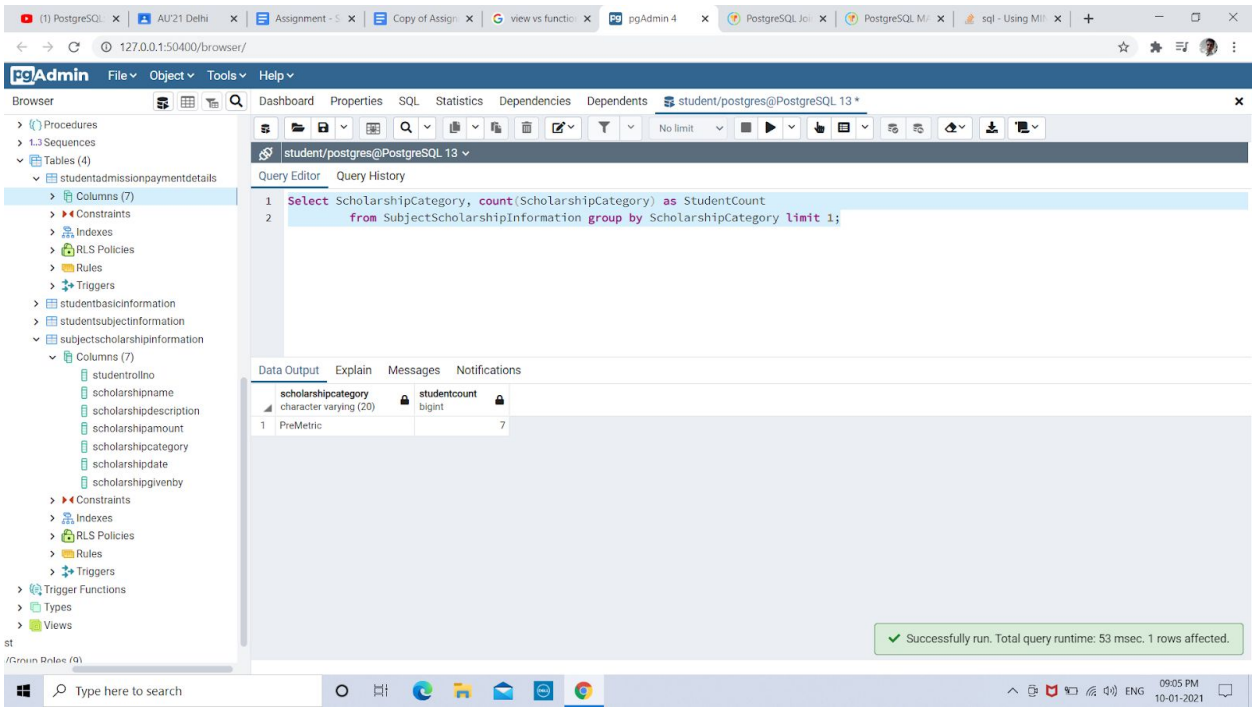
Screen Shot:



ANOTHER SIMPLE WAY OF DOING THE ABOVE QUERY IS :-

Query: Select ScholarshipCategory, count(ScholarshipCategory) as StudentCount
from SubjectScholarshipInformation group by ScholarshipCategory limit 1;

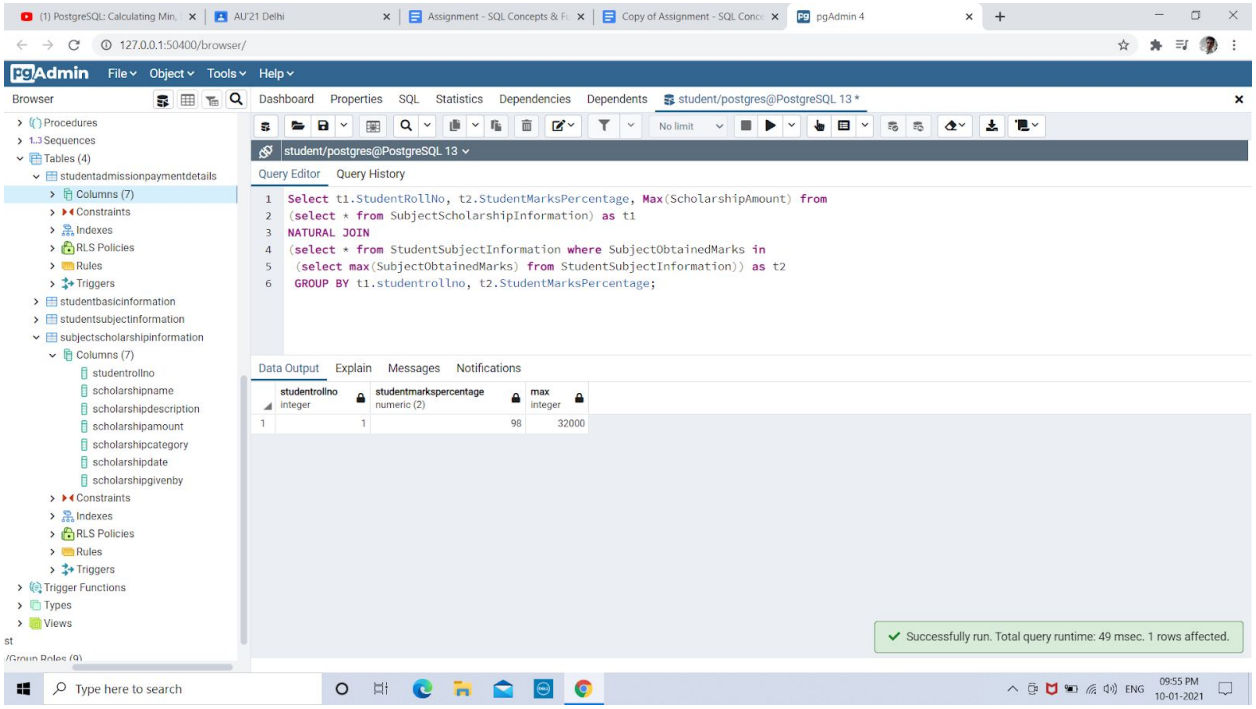
Screen Shot:



19. Retrieve the percentage of the students along with students detailed information who has scored the highest percentage along with availing the maximum scholarship amount.

Query: SELECT t1.StudentRollNo, t2.StudentMarksPercentage, Max(ScholarshipAmount) FROM
(select * from SubjectScholarshipInformation) as t1
NATURAL JOIN
(select * from StudentSubjectInformation where SubjectObtainedMarks in
(select max(SubjectObtainedMarks) from StudentSubjectInformation)) as t2
GROUP BY t1.studentrollno, t2.StudentMarksPercentage;

Screen Shot:



20. Difference between the Triggers, Stored Procedures, Views and Functions.

Key	Triggers	Stored procedures
Basic	Trigger is a stored procedure that runs automatically when various events happen (eg update, insert, delete).	Stored procedures are pieces of the code written in PL/SQL to do some specific task.
Running Methodology	It can execute automatically based on the events.	It can be invoked explicitly by the user.

Parameter	It can not take input as a parameter.	It can take input as a parameter.
Transaction statements	we can't use transaction statements inside a trigger.	We can use transaction statements like begin transaction, commit transaction, and rollback inside a stored procedure.
Return	Triggers can not return values.	Stored procedures can return values.

Views and User-Defined **Functions** almost serve the same purpose. But the major difference is that User-Defined Function can accept parameters, whereas Views cannot. And also the output of the User Defined Function can be directly used in the SELECT clause, whereas you cannot do it with a View.

Thank you. All The Best. Enjoy The Assignment.