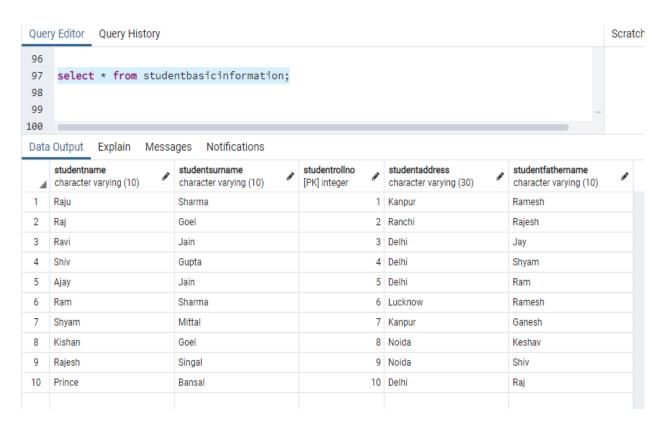
SQL Concepts and Fundamentals Assignment

- 1. Create Student Database
- 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
 - b. StudentAdmissionPaymentDetails
 - i. **Columns**
 - 1. StudentRollNo
 - 2. AmountPaid
 - 3. AmountBalance
 - 4. Add more four basic columns of the name of your own
 - 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
 - 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
- 3. Insert more than 10 records in each and every table created
- 4. Snap of the all the tables once the insertion is completed





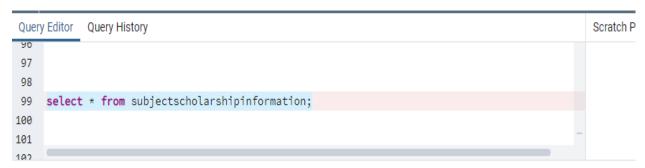
Data	Data Output Explain Messages Notifications			
4	amountpaid double precision	amountbalance double precision	studentrollno [PK] integer	
1	5000	1000	1	
2	4000	2000	2	
3	6000	0	3	
4	5500	500	4	
5	6000	0	5	
6	6000	0	6	
7	6000	0	7	
8	5000	1000	8	
9	3000	3000	9	
10	0	6000	10	

Query Editor Query History

137 Select * from studentsubjectinformation; 138 139 140 141 142

Data Output Explain Messages Notifications

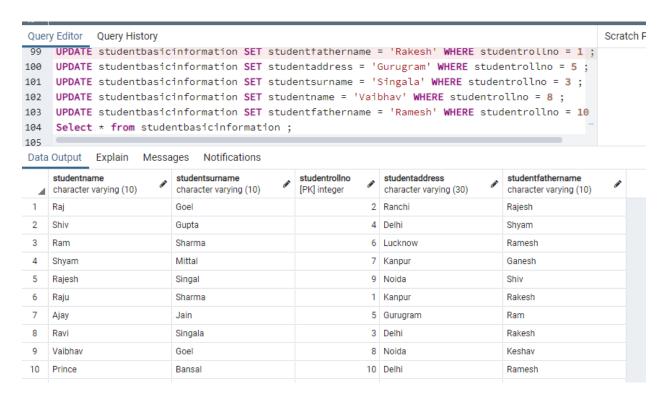
4	subjectopted character varying (10)	studentrollno [PK] integer	obtainedmarks integer	totalmarks integer	studentmarkspercentage double precision
1	Science	2	486	500	[null]
2	Law	3	422	500	[null]
3	Mechanices	4	350	500	[null]
4	Computer	5	455	500	[null]
5	English	6	399	500	[null]
6	Science	7	490	500	[null]
7	Law	8	401	500	[null]
8	Sanskrit	9	322	500	[null]
9	Computer	10	300	500	[null]
10	Computer	1	476	500	[null]



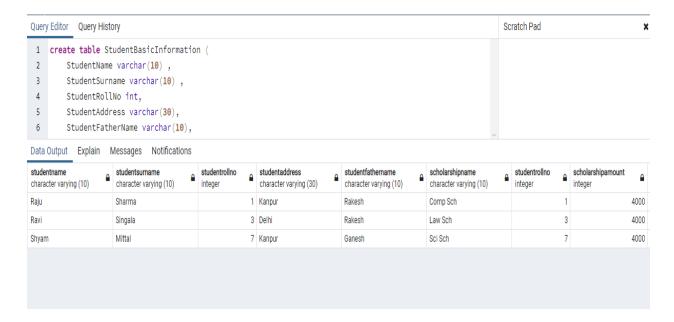
Data Output Explain Messages Notifications

4	scholarshipname character varying (10)	studentrolino [PK] integer	scholarshipamount integer	scholarshipcategory character varying (20)	isrequested boolean	isgranted boolean
1	Comp Sch	1	4000	[null]	true	true
2	Law Sch	3	4000	[null]	true	false
3	Sci Sch	2	1000	[null]	true	false
4	Sci Sch	7	4000	[null]	true	true
5	Comp Sch	5	1000	[null]	true	true
6	Comp Sch	6	2000	[null]	true	true
7	Eng Sch	10	1000	[null]	true	false

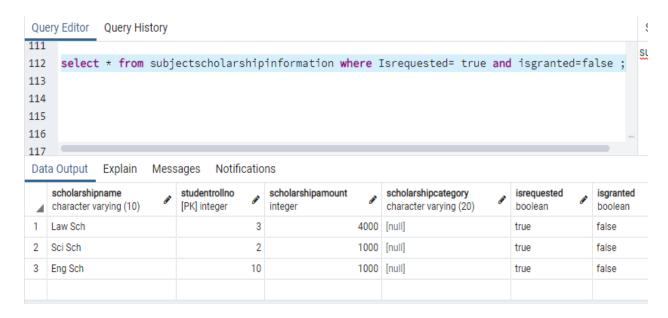
- 5. Update any 5 records of your choice in any table like update the StudentAddress with some other address content and likewise so on with any records of any table of your choice
- 6. Snap of the all the tables post updating.



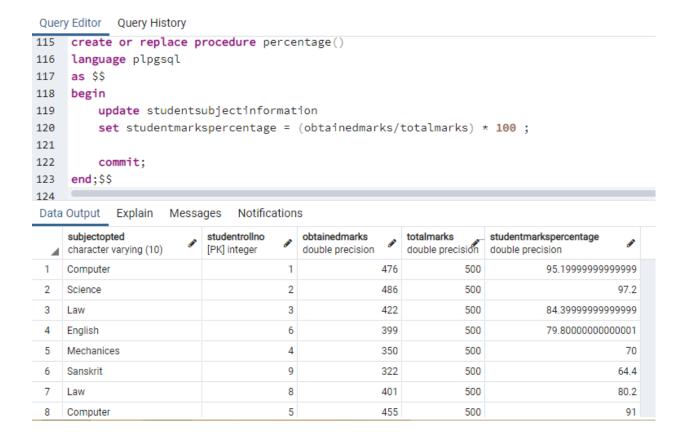
7. Select the student details records who has received the scholarship more than 3000Rs/-



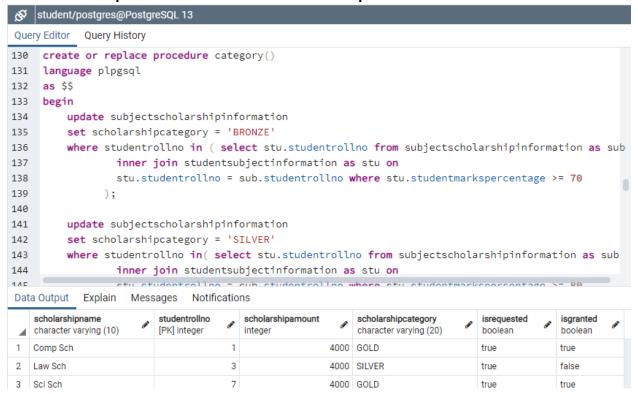
8. Select the students who opted for scholarship but has not got the scholarship



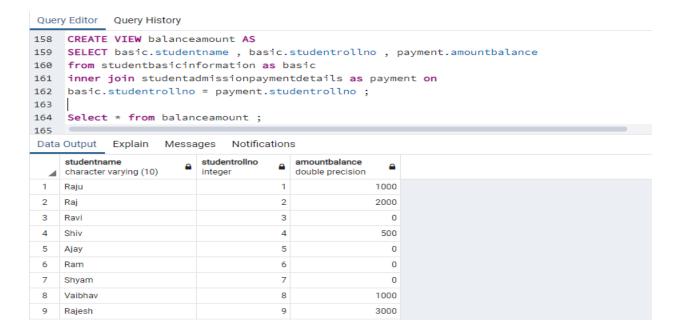
Fill in data for the percentage column i.e. StudentMarksPercentage in the table StudentSubjectInformation by creating and using the stored procedure created



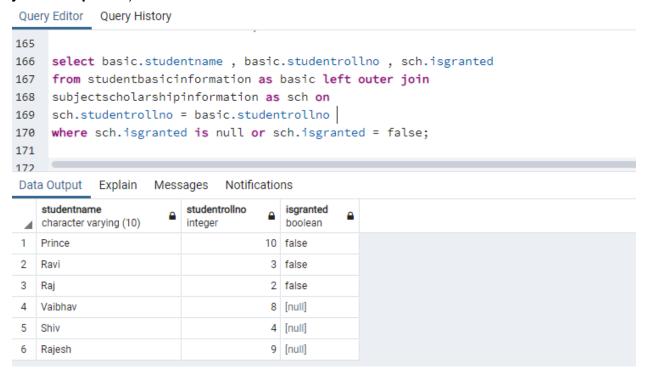
10. Decide the category of the scholarship depending upon the marks/percentage obtained by the student and likewise update the ScholarshipCategory column, create a stored procedure in order to handle this operation



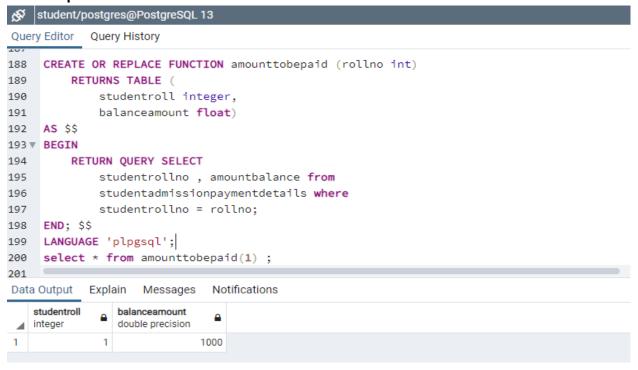
11. Create the View which shows balance amount to be paid by the student along with the student detailed information (use join)



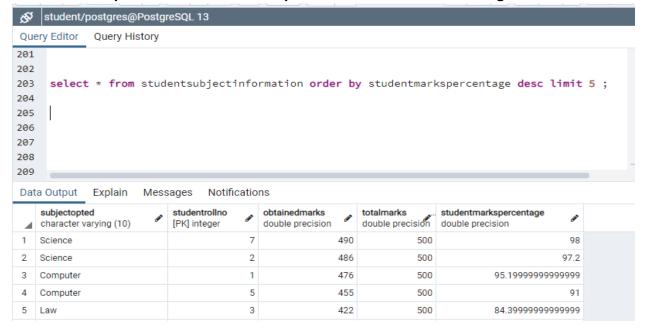
12. Get the details of the students who haven't got any scholarship (use joins/subqueries)



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



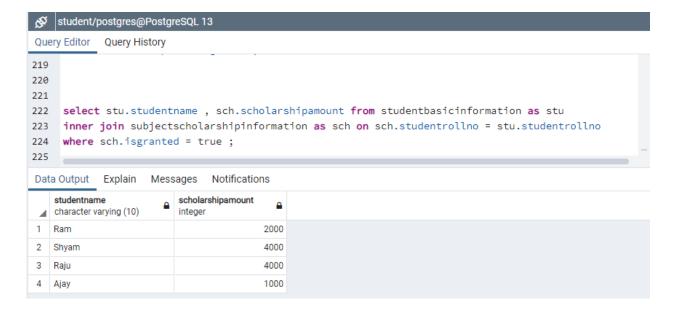




15. Try to use all the three types of join learned today in a relevant way, and explain the same why you thought of using that particular join for your selected scenarios (try to cover relevant and real time scenarios for all the three studied joins)

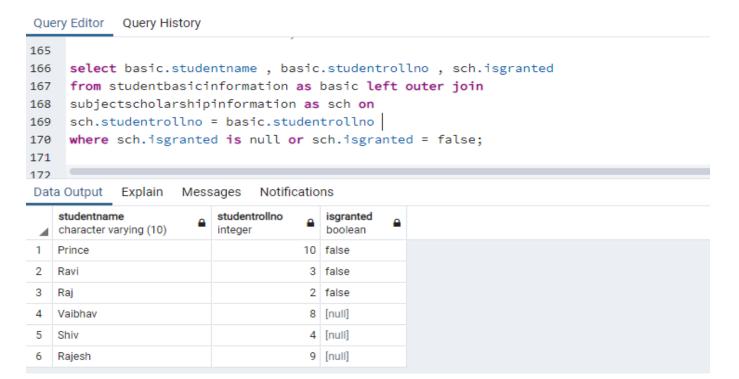
Inner join

We can use inner join in the case when want to join two tables in such a way that only those records appear which are present in both the tables. One such case is when we have to find the student names which are granted with the scholarship, in this the record should be present in both the tables that is why we have to use inner join.



Left Outer join

We use left outer join where we need all the relevant records from the left table irrespective to the thing weather same record is present in right table or not. One such case is when we have to find the names of students who haven't receive any scholarship, in this two cases are there may be student have requested but didn't granted in this case record is present in the scholarship table but if the student haven't requested then its record is not there in scholarship table but we have print their names also. Therefore we have to use left outer join.



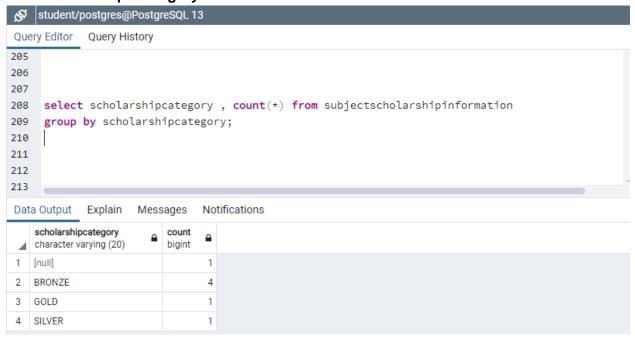
Right Outer Join

It is same as left outer join but in it all records present in right table are there irrespective to weather it is present in left table or not. So the above example will fit into it also if we put basicinformation table in right and scholarship table in left.

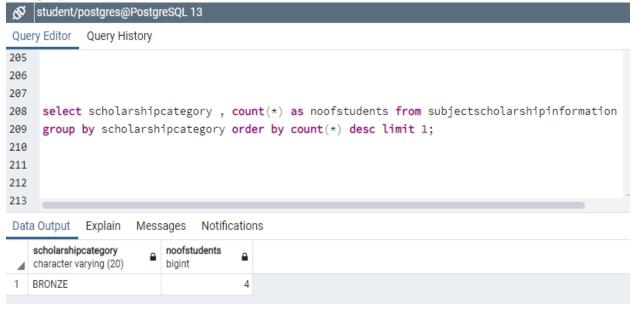
16. Mention the differences between the delete, drop and truncate commands

DELETE Command	DROP command	TRUNCATE command
It is a DML command	It is a DDL command	It is a DDL command
It is used to delete one or more rows in the table.	It is used to delete the entire table from the database.	It is used to delete all the records from the table.
It doesn't frees the memory taken by the rows.	It frees the memory taken by the table.	It frees the memory taken by the rows.

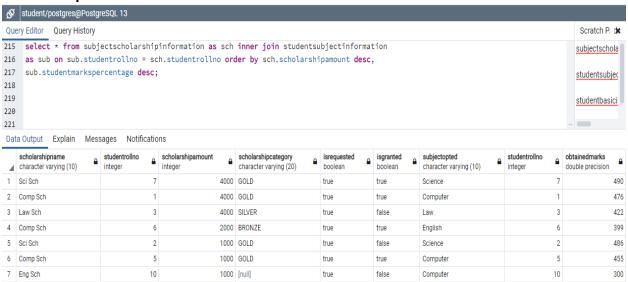
17. Get the count of the Scholarship category which is highly been availed by the students, i.e. get the count of the total number of students corresponding to the each scholarships category



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



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



20. Difference between the Triggers, Stored Procedures, Views and Functions <u>Triggers:</u>

- Trigger is a stored procedure that runs automatically when a specific event happens (update, delete, insert).
- Triggers cannot take input as a parameter
- Triggers cannot return values.

Stored Procedures:

- They are the piece of code written in a block to perform a specific task when called.
- They can take input as a parameter.
- They can only return values as an OUT parameter.

Functions:

 They are same as stored procedures but can return values and can be used in an expression.

Views:

- Views are pseudo-tables that can be made from other tables by selecting any number of rows and columns from the table.
- They are usually made to retrieve frequent used data from the table, so that time to execute the query in the whole big table is reduced.