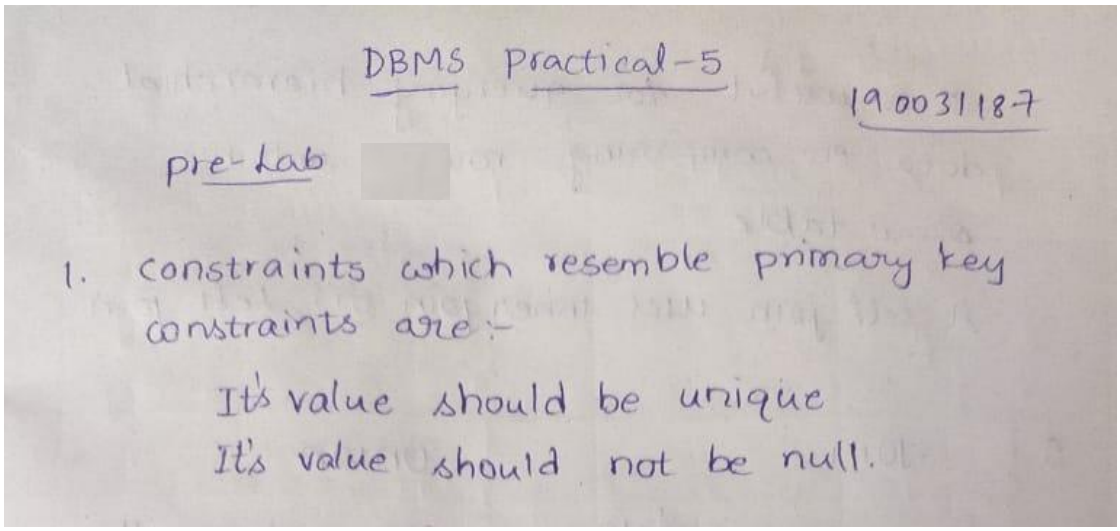
DBMS SKILL-5

PRE-LAB

1. The properties of a primary key are already known. A combination of which individual constraints resembles “Primary Key” constraint?


DBMS Practical-5

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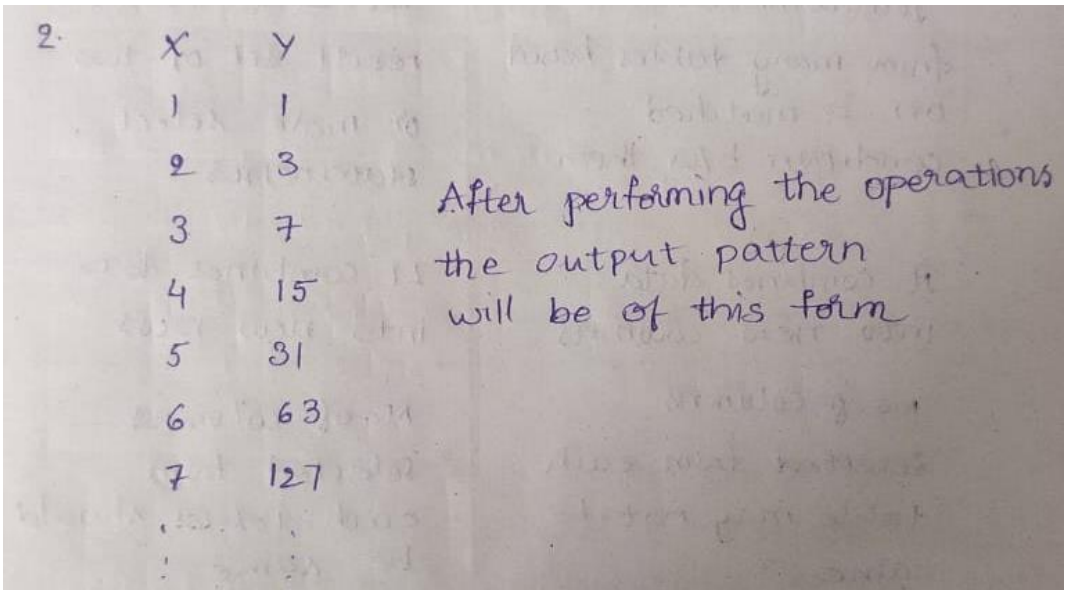
pre-Lab

1. constraints which resemble primary key constraints are :-

It's value should be unique

It's value should not be null.

2. Consider a database table T containing two columns X and Y each of type integer. After the creation of the table, one record (X=1, Y=1) is inserted in the table. Let M_X and M_Y denote the respective maximum values of X and Y among all records in the table at any point in time. Using M_X and M_Y, new records are inserted in the table 128 times with X and Y values being M_X+1, $2*M_Y+1$ respectively. It may be noted that each time after the insertion, values of M_X and M_Y change. What will be the output of the following SQL query after the steps mentioned above are carried out? Explain.


2.

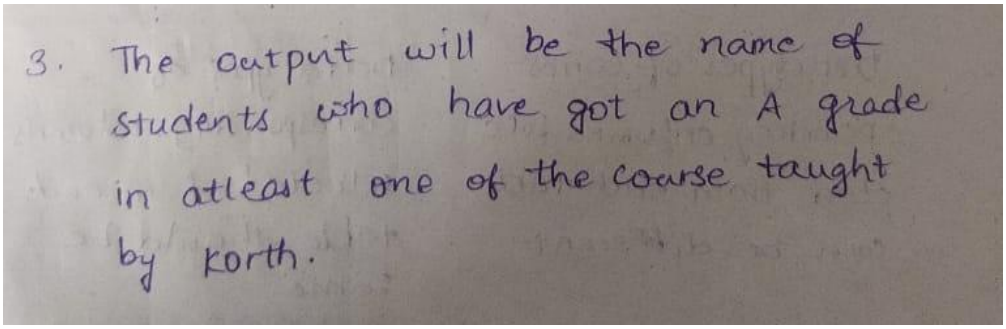
X	Y
1	1
2	3
3	7
4	15
5	31
6	63
7	127
:	:

After performing the operations the output pattern will be of this form

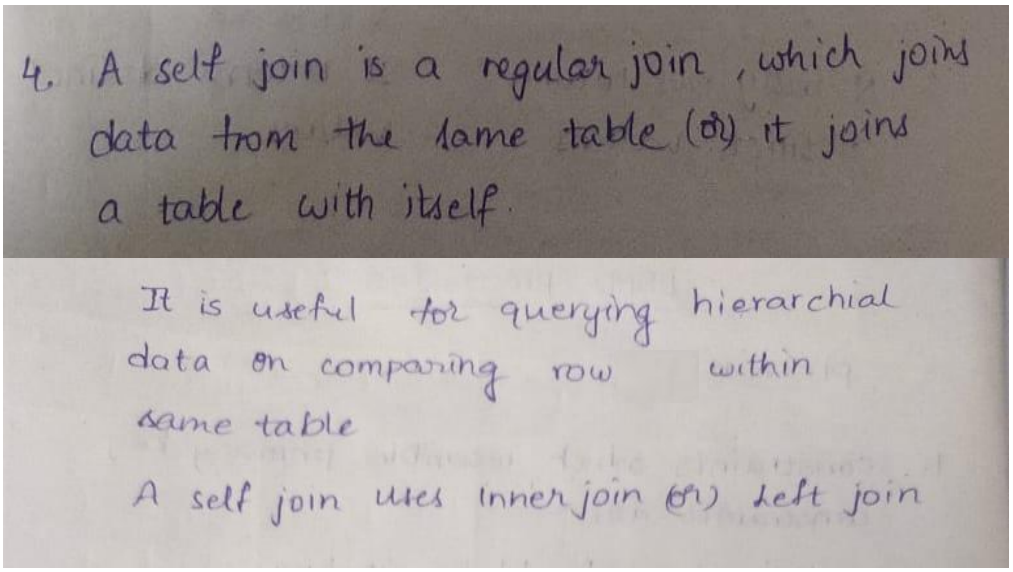
3. Consider the set of relations shown below and the SQL query that follows. Students: (Roll_number, Name, Date_of_birth)

   Courses: (Course number, Course_name, Instructor) Grades: (Roll_number, Course_number, Grade) What is the output of the given SQL query?

   select distinct Name **from** Students, Courses, Grades **where** Students. Roll_number = Grades.Roll_number **and** Courses.Instructor = 'Korth' **and** Courses.Course_number = Grades.Course_number **and** Grades.grade = 'A'



4. What self join and why it is required?



5. State the difference between UNION clause and JOIN ?

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JOIN	UNION
Join combines data from many tables based on a matched condition b/w them	SQL combines the result set of two or more select statements
It combines data into new columns	It combines data into new rows
No of columns selected from each table may not be same	No of columns selected from each tables should be same
Datatypes of corresponding columns selected from each table can be different	Datatypes of corresponding columns selected from each table should be same
It may not return distinct values	It returns distinct values.

6. Classify Outer join operations and explain briefly.

6. The outer join is classified into 3 types :-

a) Left outer join
b) Right outer join
c) Full outer join

Left outer join

It contains the set of tuples of all combinations in R and S that are equal on their common attribute names

In the left outer join, tuples in R have no matching tuples in S

It is denoted by ⟕

Right Outer join

It contains the set of tuples of all combinations in R and S that are equal on their common attributes names

In right outer join, tuples in S have no matching tuples in R.

It is denoted by ⟖

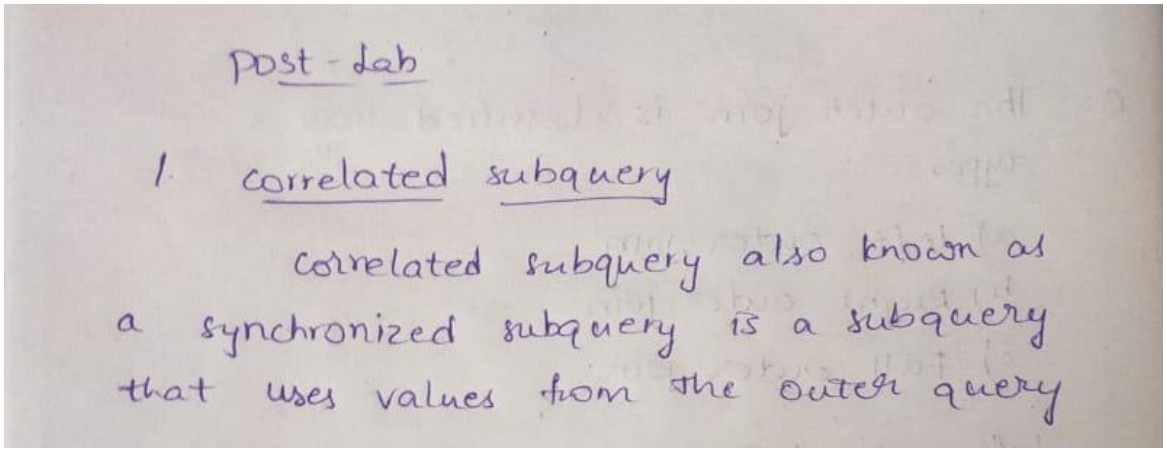
Full outer join

It is like a left (or) right join except that it contains all rows from both tables.

It is denoted by ⟗

POST LAB

1. What do you mean by Correlated subquery?

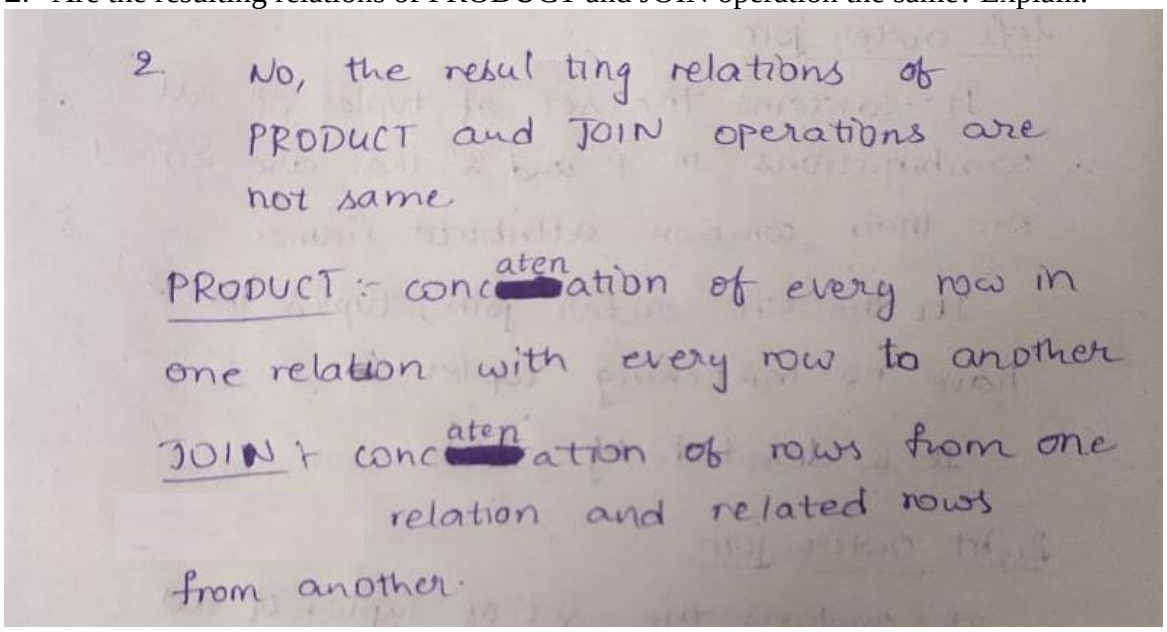


Post - Lab

1. correlated subquery

correlated subquery also known as a synchronized subquery is a subquery that uses values from the outer query

2. Are the resulting relations of PRODUCT and JOIN operation the same? Explain.

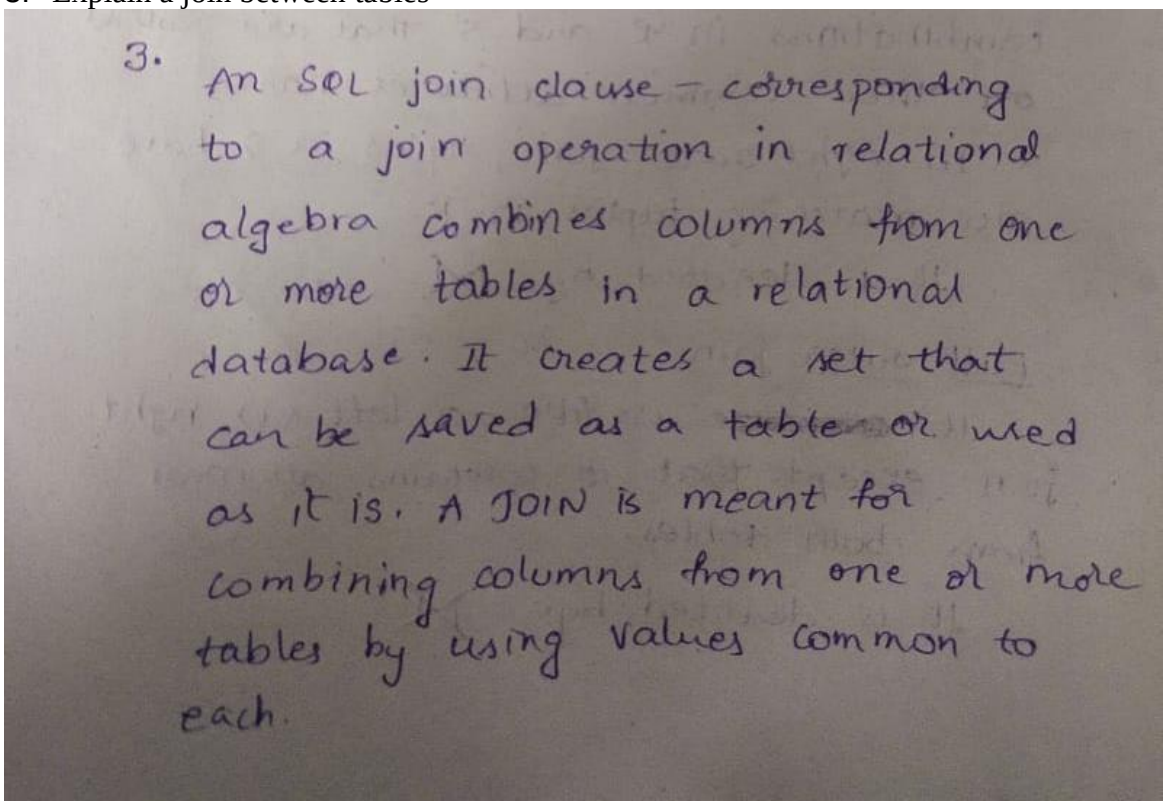


2. No, the resulting relations of PRODUCT and JOIN operations are not same

PRODUCT : concatenation of every row in one relation with every row to another

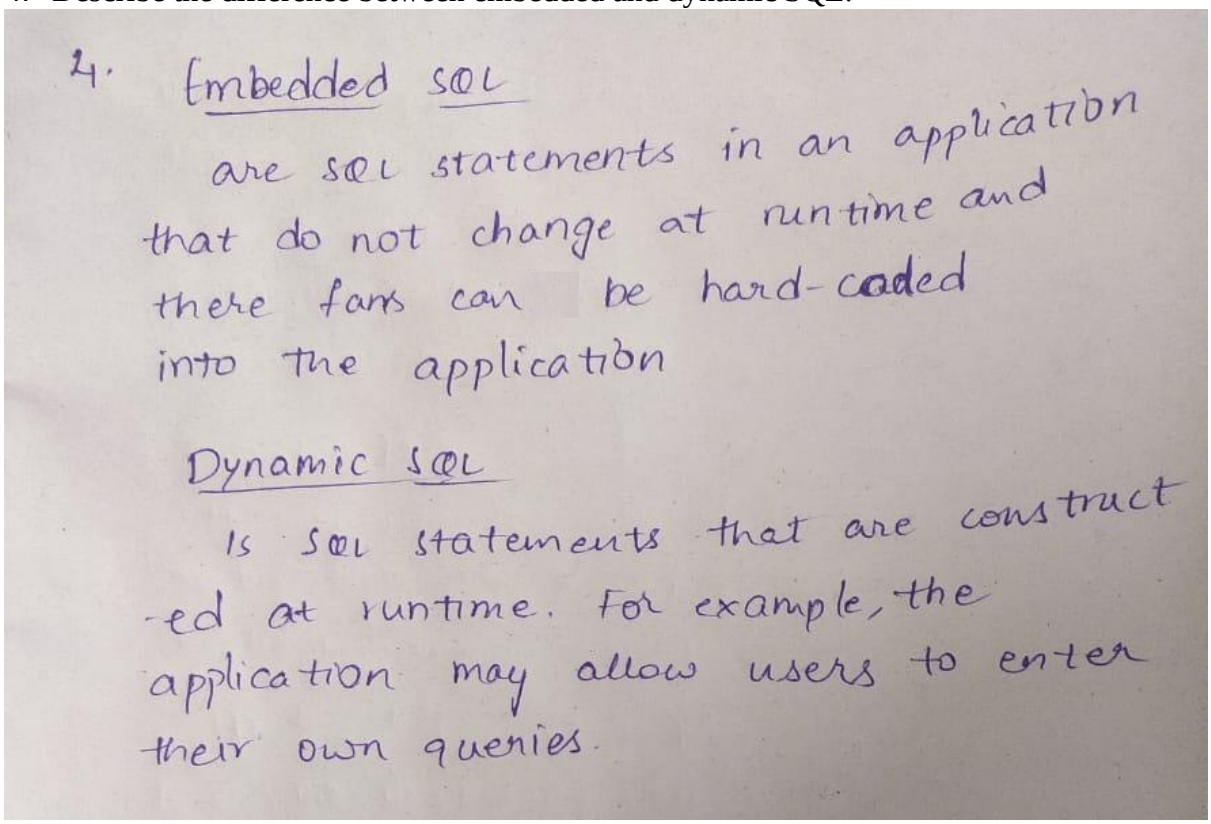
JOIN : concatenation of rows from one relation and related rows from another.

3. Explain a join between tables



3. An SQL join clause - corresponding to a join operation in relational algebra combines columns from one or more tables in a relational database. It creates a set that can be saved as a table or used as it is. A JOIN is meant for combining columns from one or more tables by using values common to each.

4. Describe the difference between embedded and dynamic SQL.



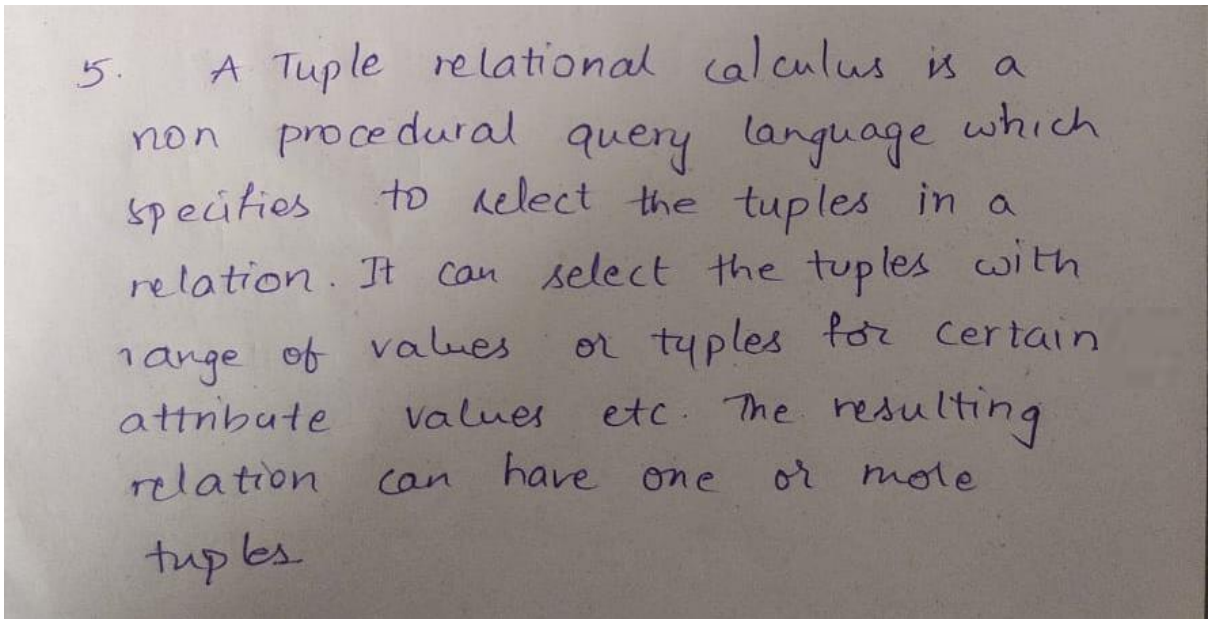
4. Embedded SQL

are SQL statements in an application that do not change at runtime and there fors can be hard-coded into the application

Dynamic SQL

Is SQL statements that are construct -ed at runtime. For example, the application may allow users to enter their own queries.

5. How does Tuple-oriented relational calculus differ from domain-oriented relational calculus?



5. A Tuple relational calculus is a non procedural query language which specifies to select the tuples in a relation. It can select the tuples with range of values or tuples for certain attribute values etc. The resulting relation can have one or more tuples