SQL INTERVIEW QUESTION

LEVEL – Medium

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Q1: List all the matches between teams, if matches are played once

INPUT

team character varying (20)
India
Pak
Aus
Eng

OUTPUT

team-A character varying (20)	team-B character varying (20)
Aus	Eng
Aus	India
Aus	Pak
Eng	India
Eng	Pak
India	Pak

```
CREATE TABLE match ( team varchar(20) )

INSERT INTO match (team) VALUES ('India'), ('Pak'), ('Aus'), ('Eng')
```

Q1: List all the matches between teams, if matches are played once

Permutation & Combination:

$$n! = n \times (n-1) \times \ldots\ldots 3 \times 2 \times 1$$

4 teams – 6 matches

Substituting four and two into the formula, n = 4 and r = 2, the result is,

$$nCr = \frac{n!}{(n-r)!\,r!}$$

4C2 = 4!/ [2! (4 – 2)!

= 4!/ (2! 2!)

= (4×3×2×1)/ (2×1×2×1)

= 6

```
WITH CTE AS ( SELECT *, ROW_NUMBER() OVER(ORDER BY team ASC)
AS id FROM match )

SELECT a.team as “team-A”, b.team as “team-B”

FROM CTE as a

join CTE as b ON a.team <> b.team

WHERE a.id < b.id
```

Q2: write a query to get the output

INPUT

id integer	name character varying (10)
1	Emp1
2	Emp2
3	Emp3
4	Emp4
5	Emp5
6	Emp6
7	Emp7
8	Emp8

OUTPUT

result text	groups integer
1 Emp1, 2 Emp2	1
3 Emp3, 4 Emp4	2
5 Emp5, 6 Emp6	3
7 Emp7, 8 Emp8	4

```
CREATE TABLE emp ( ID int, NAME varchar(10) )


INSERT INTO emp (ID, NAME)

VALUES (1,'Emp1'), (2,'Emp2'), (3,'Emp3'), (4,'Emp4'),
(5,'Emp5'), (6,'Emp6'), (7,'Emp7'), (8,'Emp8');
```

Q2: write a query to get the output

Solution

```
WITH CTE AS
( SELECT CONCAT(ID , ' ', NAME) AS con_name, NTILE(4) OVER(ORDER BY ID
ASC) AS groups FROM emp )
SELECT STRING_AGG(con_name, ', ') as result, groups
FROM CTE
GROUP BY groups
ORDER BY groups
```

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