



ROW\_NUMBER()  
DENSE\_RANK()

```
DROP TABLE IF EXISTS employees;  
CREATE TABLE employees (  
    employee_id INTEGER NOT NULL PRIMARY KEY,  
    name VARCHAR(100),  
    department VARCHAR(50),  
    salary INTEGER,  
    joining_date DATE  
);
```

```
INSERT INTO employees (employee_id, name, department, salary, joining_date) VALUES  
(1, 'Judy', 'HR', 60000, '2020-01-15'),  
(2, 'Khan', 'IT', 75000, '2019-11-23'),  
(3, 'Sameer', 'IT', 75000, '2021-03-01'), -- duplicate salary  
(4, 'Carlos', 'Finance', 68000, '2018-07-12'),  
(5, 'Eve', 'Finance', 70000, '2020-06-30'),  
(6, 'Happy', 'HR', 62000, '2019-05-17'),  
(7, 'Grace', 'IT', 77000, '2020-10-10'),  
(8, 'Heidi', 'Finance', 70000, '2022-02-14'), -- duplicate salary  
(9, 'Ivan', 'HR', 62000, '2021-08-19'), -- duplicate salary  
(10, 'Alice', 'IT', 73000, '2022-01-01');
```

	employee_id	name	department	salary	joining_date
1	1	Judy	HR	60000	2020-01-15
2	2	Khan	IT	75000	2019-11-23
3	3	Sameer	IT	75000	2021-03-01
4	4	Carlos	Finance	68000	2018-07-12
5	5	Eve	Finance	70000	2020-06-30
6	6	Happy	HR	62000	2019-05-17
7	7	Grace	IT	77000	2020-10-10
8	8	Heidi	Finance	70000	2022-02-14
9	9	Ivan	HR	62000	2021-08-19
10	10	Alice	IT	73000	2022-01-01



## ROW\_NUMBER()



- Assigns **unique sequential number** to each row
- No ties allowed (even if salary is same)

```
SELECT name,  
       department,  
       salary,  
       ROW_NUMBER() OVER (ORDER BY salary DESC) AS row_num  
FROM employees;
```

Even if two employees have same salary,  
every row gets a **unique** number.

Example: Khan and Sameer have same salary and they  
get **unique** number in row\_number

	name	department	salary	row_num
1	Grace	IT	77000	1
2	Khan	IT	75000	2
3	Sameer	IT	75000	3
4	Alice	IT	73000	4
5	Eve	Finance	70000	5
6	Heidi	Finance	70000	6
7	Carlos	Finance	68000	7
8	Happy	HR	62000	8
9	Ivan	HR	62000	9
10	Judy	HR	60000	10

## Department-wise Ranking Example:

**ROW\_NUMBER** Per Department



```
SELECT name,  
       department,  
       salary,  
       ROW_NUMBER() OVER (  
           PARTITION BY department  
           ORDER BY salary DESC  
       ) AS dept_row_num  
  
FROM employees;
```

	name	department	salary	dept_row_num
1	Eve	Finance	70000	1
2	Heidi	Finance	70000	2
3	Carlos	Finance	68000	3
4	Happy	HR	62000	1
5	Ivan	HR	62000	2
6	Judy	HR	60000	3
7	Grace	IT	77000	1
8	Khan	IT	75000	2
9	Sameer	IT	75000	3
10	Alice	IT	73000	4

## DENSE\_RANK()

- Gives same rank to equal values
- Does NOT skip ranking numbers



```
SELECT name,  
       department,  
       salary,  
       DENSE_RANK() OVER (ORDER BY salary DESC) AS dense_rank  
FROM employees;
```

If two employees have same salary, those rows gets a **same** number.

Example: Khan and Sameer have same salary and they get **same** number in dense\_rank.

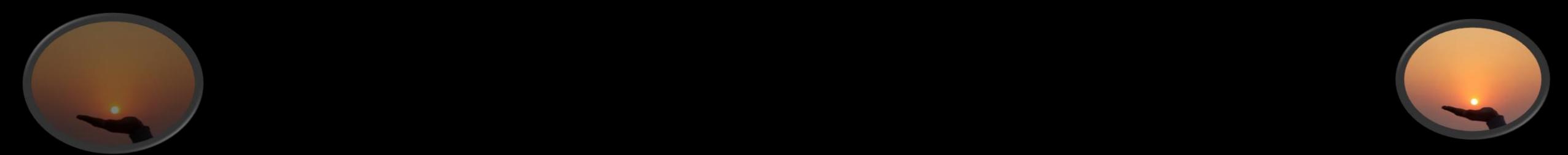
	name	department	salary	dense_rank
1	Grace	IT	77000	1
2	Khan	IT	75000	2
3	Sameer	IT	75000	2
4	Alice	IT	73000	3
5	Eve	Finance	70000	4
6	Heidi	Finance	70000	4
7	Carlos	Finance	68000	5
8	Happy	HR	62000	6
9	Ivan	HR	62000	6
10	Judy	HR	60000	7

## DENSE\_RANK Per Department



```
SELECT name,  
       department,  
       salary,  
       DENSE_RANK() OVER (  
           PARTITION BY department  
           ORDER BY salary DESC  
       ) AS dept_dense_rank  
FROM employees;
```

	name	department	salary	dept_dense_rank
1	Eve	Finance	70000	1
2	Heidi	Finance	70000	1
3	Carlos	Finance	68000	2
4	Happy	HR	62000	1
5	Ivan	HR	62000	1
6	Judy	HR	60000	2
7	Grace	IT	77000	1
8	Khan	IT	75000	2
9	Sameer	IT	75000	2
10	Alice	IT	73000	3



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