Row_number, Rank(), Dense_rank()

- **ROW_NUMBER**: It just returns the sequence numbers starts from 1.
- **RANK**: Returns the rank of each record in the current result set.
- **DENSE_RANK**: It is same as Rank() function. But it returns without gaps in ranking.

emp_id	emp_name	dept_id	salary
1	Ankit	100	10000
2	Mohit	100	15000
3	Vikas	100	10000
4	Rohit	100	5000
5	Mudit	200	12000
6	Agam	200	12000
7	Sanjay	200	9000
8	Ashish	200	5000

1. Based on salary

```
select *,
row_number() over(order by salary desc) as rn,
rank() over(order by salary desc) as rk,
dense_rank() over(order by salary desc) as drk
from employee1
```

100 %

Results | Messages

	emp_id	emp_name	dept_id	salary	rn	rk	drk
1	2	Mohit	100	15000	1	1	1
2	5	Mudit	200	12000	2	2	2
3	6	Agam	200	12000	3	2	2
4	1	Ankit	100	10000	4	4	3
5	3	Vikas	100	10000	5	4	3
6	7	Sanjay	200	9000	6	6	4
7	8	Ashish	200	5000	7	7	5
8	4	Rohit	100	5000	8	7	5

2. Based on dept_id and salary

```
select *,
row_number() over(partition by dept_id order by salary desc) as rn,
rank() over(partition by dept_id order by salary desc) as rk,
dense_rank() over(partition by dept_id order by salary desc) as drk
from employee1
```

100 %

Results | Messages

	emp_id	emp_name	dept_id	salary	rn	rk	drk
1	2	Mohit	100	15000	1	1	1
2	1	Ankit	100	10000	2	2	2
3	3	Vikas	100	10000	3	2	2
4	4	Rohit	100	5000	4	4	3
5	5	Mudit	200	12000	1	1	1
6	6	Agam	200	12000	2	1	1
7	7	Sanjay	200	9000	3	3	2
8	8	Ashish	200	5000	4	4	3

with calculated column

```
1 row_number_rank = RANKX(employee,employee[emp_id],,ASC)
```

emp_id	emp_name	dept_id	salary	row_number_rank	rank_rank	dense_rank
2	Mohit	100	15000	2	1	1
6	Agam	200	12000	6	2	2
5	Mudit	200	12000	5	2	2
3	Vikas	100	10000	3	4	3
1	Ankit	100	10000	1	4	3
7	Sanjay	200	9000	7	6	4
8	Ashish	200	5000	8	7	5
4	Rohit	100	5000	4	7	5

```
1 rank_rank = RANKX(employee,employee[salary],,DESC)
```

emp_id	emp_name	dept_id	salary	row_number_rank	rank_rank	dense_rank
2	Mohit	100	15000	2	1	1
6	Agam	200	12000	6	2	2
5	Mudit	200	12000	5	2	2
3	Vikas	100	10000	3	4	3
1	Ankit	100	10000	1	4	3
7	Sanjay	200	9000	7	6	4
8	Ashish	200	5000	8	7	5
4	Rohit	100	5000	4	7	5

```
1 dense_rank = RANKX(employee,employee[salary],,DESC,Dense)
```

emp_id	emp_name	dept_id	salary	row_number_rank	rank_rank	dense_rank
2	Mohit	100	15000	2	1	1
6	Agam	200	12000	6	2	2
5	Mudit	200	12000	5	2	2
3	Vikas	100	10000	3	4	3
1	Ankit	100	10000	1	4	3
7	Sanjay	200	9000	7	6	4
8	Ashish	200	5000	8	7	5
4	Rohit	100	5000	4	7	5

with measure

```
1  Rank_measure =
2  RANKX(
3      ALLSELECTED('employee'),
4      CALCULATE(SUM('employee'[salary])),
5      ,
6      DESC,
7      Skip
8  )
9
```

emp_id	emp_name	dept_id	Sum of salary	Rank_measure	DenseRank_measure
2	Mohit	100	15000	1	1
5	Mudit	200	12000	2	2
6	Agam	200	12000	2	2
1	Ankit	100	10000	4	3
3	Vikas	100	10000	4	3
7	Sanjay	200	9000	6	4
4	Rohit	100	5000	7	5
8	Ashish	200	5000	7	5
Total			**78000**	**1**	**1**

emp_name

- [ ] Agam
- [ ] Ankit
- [ ] Ashish
- [ ] Mohit
- [ ] Mudit
- [ ] Rohit

```
DenseRank_measure =
RANKX(
    ALLSELECTED('employee'),
    CALCULATE(SUM('employee'[salary])),
    ,
    DESC,
    Dense
)
```

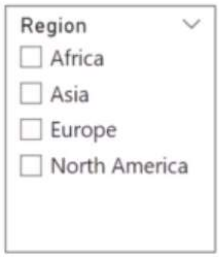
mp_id	emp_name	dept_id	Sum of salary	Rank_measure	DenseRank_measure
2	Mohit	100	15000	1	1
5	Mudit	200	12000	2	2
6	Agam	200	12000	2	2
1	Ankit	100	10000	4	3
3	Vikas	100	10000	4	3
7	Sanjay	200	9000	6	4
4	Rohit	100	5000	7	5
8	Ashish	200	5000	7	5
Total			**78000**	**1**	**1**

#question – why this ranking is not working?

-because Region filter context

```
Ranking = RANKX((Sales),SUM(Sales[Sales Value]),,DESC,Dense)
```

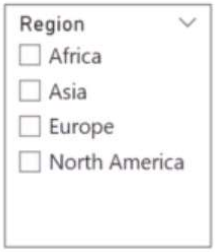
Region	Sales Value	Ranking
Africa	425	1
Asia	450	1
Europe	1000	1
North America	1440	1
Total	**3315**	**1**



Even if we write ALL function- it's not working

```
1 Ranking = RANKX(ALL(Sales),SUM(Sales[Sales Value]),,DESC,Dense)
```

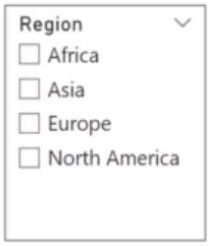
Region	Sales Value	Ranking
Africa	425	1
Asia	450	1
Europe	1000	1
North America	1440	1
Total	**3315**	**1**



-if we provide Region column – still it's not correct

```
1 Ranking = RANKX(ALL(Sales[Region]),SUM(Sales[Sales Value]),,DESC,
  Dense)
```

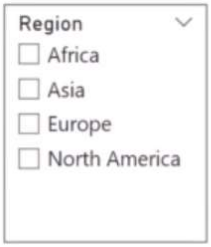
Region	Sales Value	Ranking
Africa	425	1
Asia	450	1
Europe	1000	1
North America	1440	1
Total	**3315**	**1**



- When we take measure of total sales- then its work

```
l Ranking = RANKX(ALL(Sales[Region]),[Total Sales],,DESC,Dense)
```

Region	Sales Value	Ranking
North America	1440	1
Europe	1000	2
Asia	450	3
Africa	425	4
Total	**3315**	**1**



-

-with Allselected

```
1 Ranking = RANKX(ALLSELECTED(Sales[Region]),[Total Sales],,DESC,
  Dense)
```