

Aggregating and Summarizing Data with Functions



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Overview



Averages in Analysis

Sales Percentage

- Sales Qty / Total Sales Qty

Average Sales

- AVG

Percentile

- Distribution

Scalar Functions

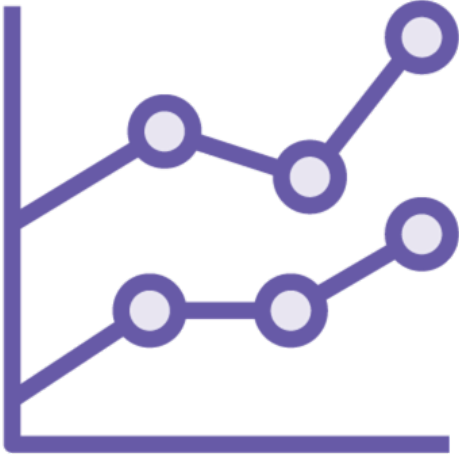
- PERCENT_RANK
- FIRST_VALUE
- LAST_VALUE



Percentiles are great
because they allow us to
see the distribution of the
data



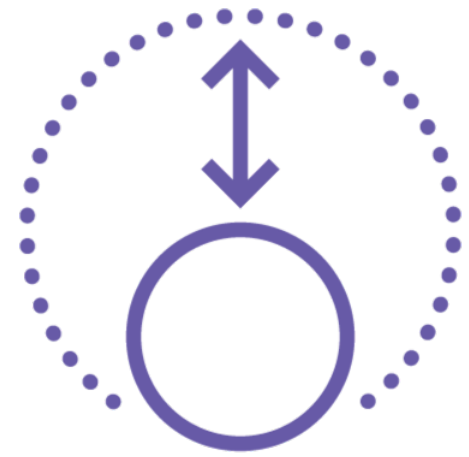
Percentiles and Ranges



Relative Performance
Score / Max Score



Recession
Average Sales Values
Fall



Relative Sales
Score Relative to
Lower Scores

Percentiles are often used
to compare students exam
results



Ranges and Percentiles

Student Score	Max Score	%
70	175	40%
158	175	90%

Score as a %
Score / Max Score

Subject	Student ID	Score	Percent Rank
English	1	70	0
English	2	75	11
English	3	80	22
English	4	85	33
English	5	95	44
English	6	100	55
English	7	105	66
English	8	110	77
English	9	120	88
English	10	160	100

Percent Rank
Relative Score
Compared to Lower
Scores

Subject	Student ID	Score	Percent Rank
Maths	1	70	0
Maths	2	70	0
Maths	3	70	0
Maths	4	70	0
Maths	5	95	44
Maths	6	95	44
Maths	7	95	44
Maths	8	110	77
Maths	9	110	77
Maths	10	158	100

Repeating Scores
Percent Rank Also
Repeats



Percent Rank



First and Last Value



FIRST_VALUE (3)

OVER (Partition By Order By

Rows Range Clause)

RANGE FUNCTIONS

Scalar Expression

Column, Subquery or Result from Scalar expression

Rows Range Clause

Determines the direction of the search



Preceding and Following Rows

Subject	Student ID	Score	First Value
English	1	70	
English	2	75	
English	3	80	
English	4	85	
English	5	95	70
English	6	100	
English	7	105	
English	8	110	
English	9	120	
English	10	160	

FIRST_VALUE



ROWS UNBOUNDED
PRECEDING



Preceding and Following Rows

Subject	Student ID	Score	First Value
English	1	70	
English	2	75	
English	3	80	
English	4	85	
English	5	95	70
English	6	100	
English	7	105	
English	8	110	
English	9	120	
English	10	160	

FIRST_VALUE
ROWS UNBOUNDED
PRECEDING



Preceding and Following Rows

Subject	Student ID	Score	First Value
English	1	70	
English	2	75	
English	3	80	
English	4	85	
English	5	95	70
English	6	100	
English	7	105	
English	8	110	
English	9	120	
English	10	160	

FIRST_VALUE
ROWS UNBOUNDED
PRECEDING

Subject	Student ID	Score	Last Value
English	1	70	
English	2	75	
English	3	80	
English	4	85	
English	5	95	95
English	6	100	
English	7	105	
English	8	110	
English	9	120	
English	10	160	

LAST_VALUE



ROWS UNBOUNDED
FOLLOWING



Preceding and Following Rows

Subject	Student ID	Score	First Value
English	1	70	
English	2	75	
English	3	80	
English	4	85	
English	5	95	70
English	6	100	
English	7	105	
English	8	110	
English	9	120	
English	10	160	

FIRST_VALUE
ROWS UNBOUNDED
PRECEDING

Subject	Student ID	Score	Last Value
English	1	70	
English	2	75	
English	3	80	
English	4	85	
English	5	95	160
English	6	100	
English	7	105	
English	8	110	
English	9	120	
English	10	160	

LAST_VALUE
ROWS UNBOUNDED
FOLLOWING



LAST_VALUE (3)

OVER (Partition By Order By

Rows Range Clause)

RANGE FUNCTIONS

Scalar Expression

Column, Subquery or Result from Scalar expression

Rows Range Clause

Determines the direction of the search



Summary



Percentiles

- PERCENT_RANK

Range Functions

- FIRST_VALUE
- LAST_VALUE

Additional Parameters

- Scalar Expression
- Rows Range Clause

