

Custom Aggregations

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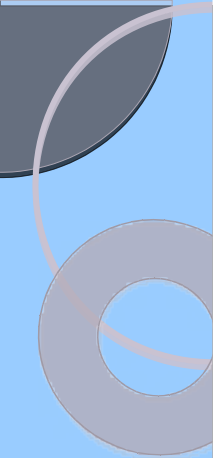
LDS Church

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What does this do?

- with qry as (
 - select 2 C1 from dual
 - union all
 - select 4 from dual
 - union all
 - select 8 from dual)
- select EXP(SUM(LN(C1))) RESULT
- from qry



What are the other options?

- User-Defined Aggregate Functions
- Use ODCIAggregate interface routines
 - ODCIAggregateInitialize
 - ODCIAggregateIterate
 - ODCIAggregateMerge
 - ODCIAggregateTerminate
- Iterate only sees non-NULL values

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Demo Product Aggregation

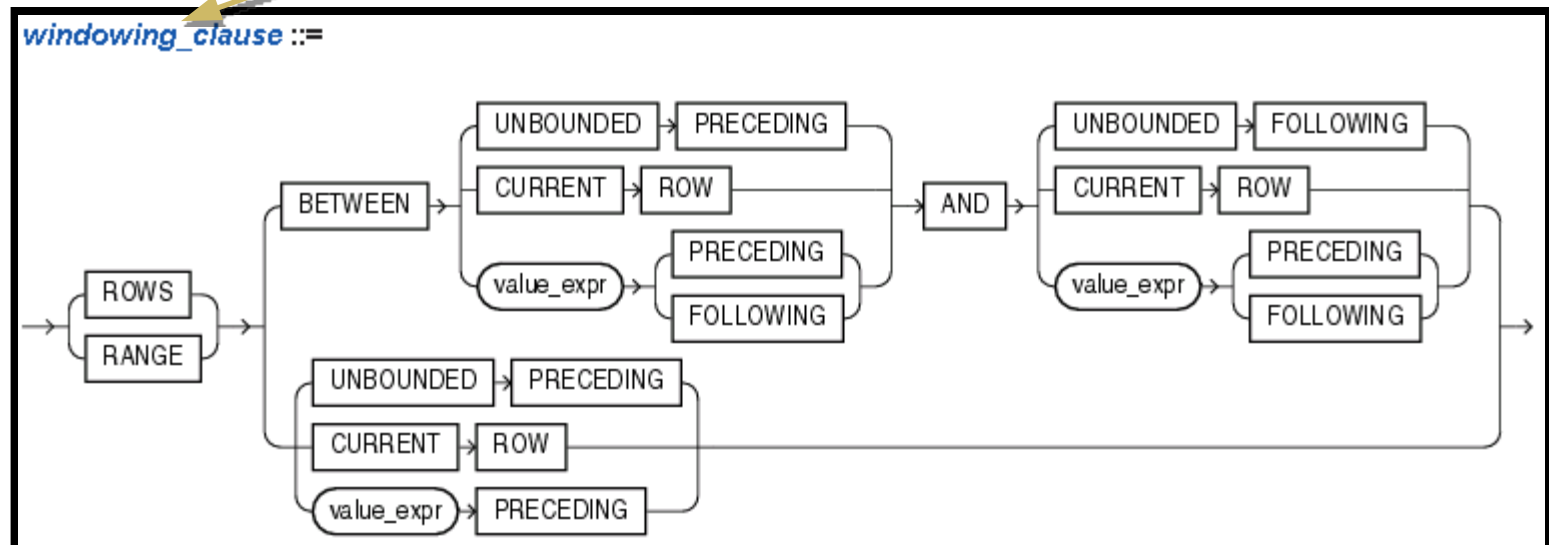
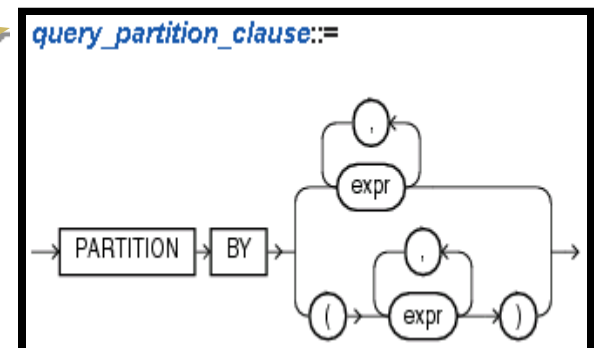
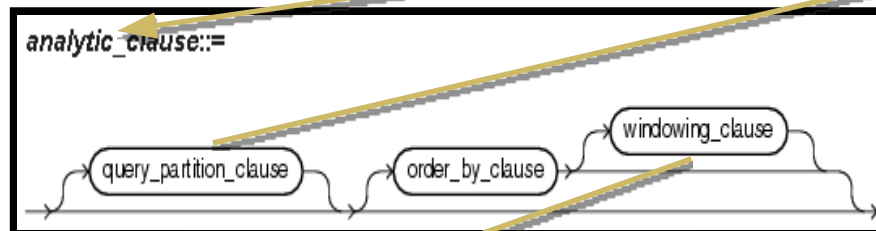
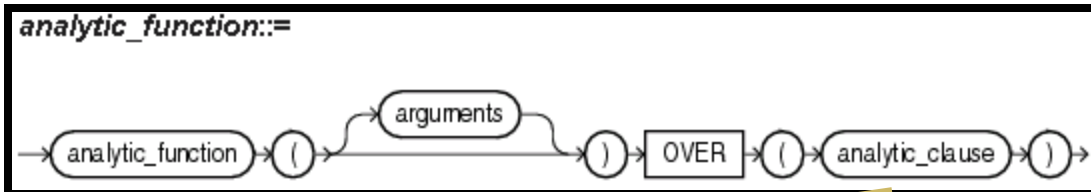
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1 1 1

DDDD	EEEEEE	M	M	OOO
D DD	E	MM	MM	O O
D D	EEE	M M M		O O
D DD	E	M M		O O
DDDD	EEEEEE	M	M	OOO

Analytic Functions



Analytic Functions

AVG
CLUSTER_DETAILS
CLUSTER_DISTANCE
CLUSTER_ID
CLUSTER_PROBABILITY
CLUSTER_SET
CORR
COUNT
COVAR_POP
COVAR_SAMP
CUME_DIST
DENSE_RANK
FEATURE_DETAILS
FEATURE_ID
FEATURE_SET
FEATURE_VALUE

FIRST
FIRST_VALUE
LAG
LAST
LAST_VALUE
LEAD
LISTAGG
MAX
MEDIAN
MIN
NTH_VALUE
NTILE
PERCENT_RANK
PERCENTILE_CONT
PERCENTILE_DISC
PREDICTION

PREDICTION_COST
PREDICTION_DETAILS
PREDICTION_PROBABILITY
PREDICTION_SET
RANK
RATIO_TO_REPORT
REGR_(Linear
 Regression Functions)
ROW_NUMBER
STDDEV
STDDEV_POP
STDDEV_SAMP
SUM
VAR_POP
VAR_SAMP
VARIANCE

Demo Analytic Functions

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DDDD	EEEEEE	M	M	OOO
D DD	E	MM	MM	O O
D D	EEE	M M M		O O
D DD	E	M	M	O O
DDDD	EEEEEE	M	M	OOO

What does this output?

```
·with qry as (  
·  select 1 C1 from dual  
·  union all  
·  select 2 from dual  
·  union all  
·  select 3 from dual  
·  union all  
·  select 4 from dual  
·)  
·select collect(C1) C1  
·from qry
```


Table Function

```
·with qry as (  
·  select 1 C1 from dual  
·  union all  
·  select 2 from dual  
·  union all  
·  select 3 from dual  
·  union all  
·  select 4 from dual  
·)  
·select *  
·from table(select collect(C1) C1  
·           from qry)
```

Demo Table Functions

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DDDD	EEEEEE	M	M	OOO
D DD	E	MM	MM	O O
D D	EEE	M M M		O O
D DD	E	M	M	O O
DDDD	EEEEEE	M	M	OOO

Make an XmR (Shewhart) Chart

- Detect shift from normal variations

● ex. computing tickets closed

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Demo XmR Aggregate

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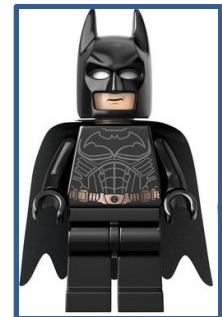
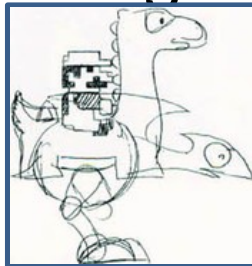
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1 1 1

DDDD	EEEEEE	M	M	OOO
D DD	E	MM	MM	O O
D D	EEE	M M M		O O
D DD	E	M	M	O O
DDDD	EEEEEE	M	M	OOO

What did we learn?

- User-Defined Aggregate Functions
 - Group By
 - Analytic Functions
- Table Function
- Types
- XmR Charts
 - Using Aggregate and Table



Pipelining

- http://docs.oracle.com/cd/E18283_01/a
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- Pipe the row out so it doesn't have to process everything before giving an output