20

Expressions

Objectives

After completing this lesson, you should be able to use:

- SQL Syntax and Semantics
- Aggregate functions
- Time series functions
- Advance analytics functions

SQL Syntax and Semantics

- Basic Syntax for the SELECT Statement

```
SELECT [DISTINCT] select list
FROM from clause
[WHERE search condition]
[GROUP BY column {, column}
    [HAVING search condition]]
[ORDER BY column {, column}]
```

Where:
Select list is the list of columns specified in the request.
FROM clause is the list of tables in the request.
A WHERE clause acts as a filter.
Search condition specifies any combination of conditions to form a conditional test.
GROUP BY column {, column} specifies a column (or alias) belonging to a table defined in the data source.
HAVING search condition specifies any combination of conditions to form a conditional test.
ORDER BY *column* {, *column*} specifies the columns to order the results by.

Aggregate Functions

- Aggregate functions perform operations on multiple values to create summary results.
- Aggregate functions include:
  1) AGGREGATE AT
  2) AVG
  3) AVGDISTINCT
  4) BOTTOMN
  5) COUNT
  6) MAX
  7) SUM
  8) TOPN

Running Aggregate Functions

- Running Aggregate functions perform operations on a set of records as input, but instead of outputting a single aggregate for the entire set of records, they output the aggregate based on records encountered so far.
- Running Aggregate functions include:
  1) MAVG
  2) MSUM
  3) RSUM
  4) RCOUNT
  5) RMAX
  6) RMIN

Time Series Functions

- Time Series functions operate on time-oriented dimensions.
- Time Series functions include:
  1) AGO
  2) PERIODROLLING
  3) TODATE

Conversion Functions

- Conversion functions convert a value from one form to another.
- Conversion functions include:
  1) CAST
  2) IFNULL
  3) TO_DATETIME

Database Functions

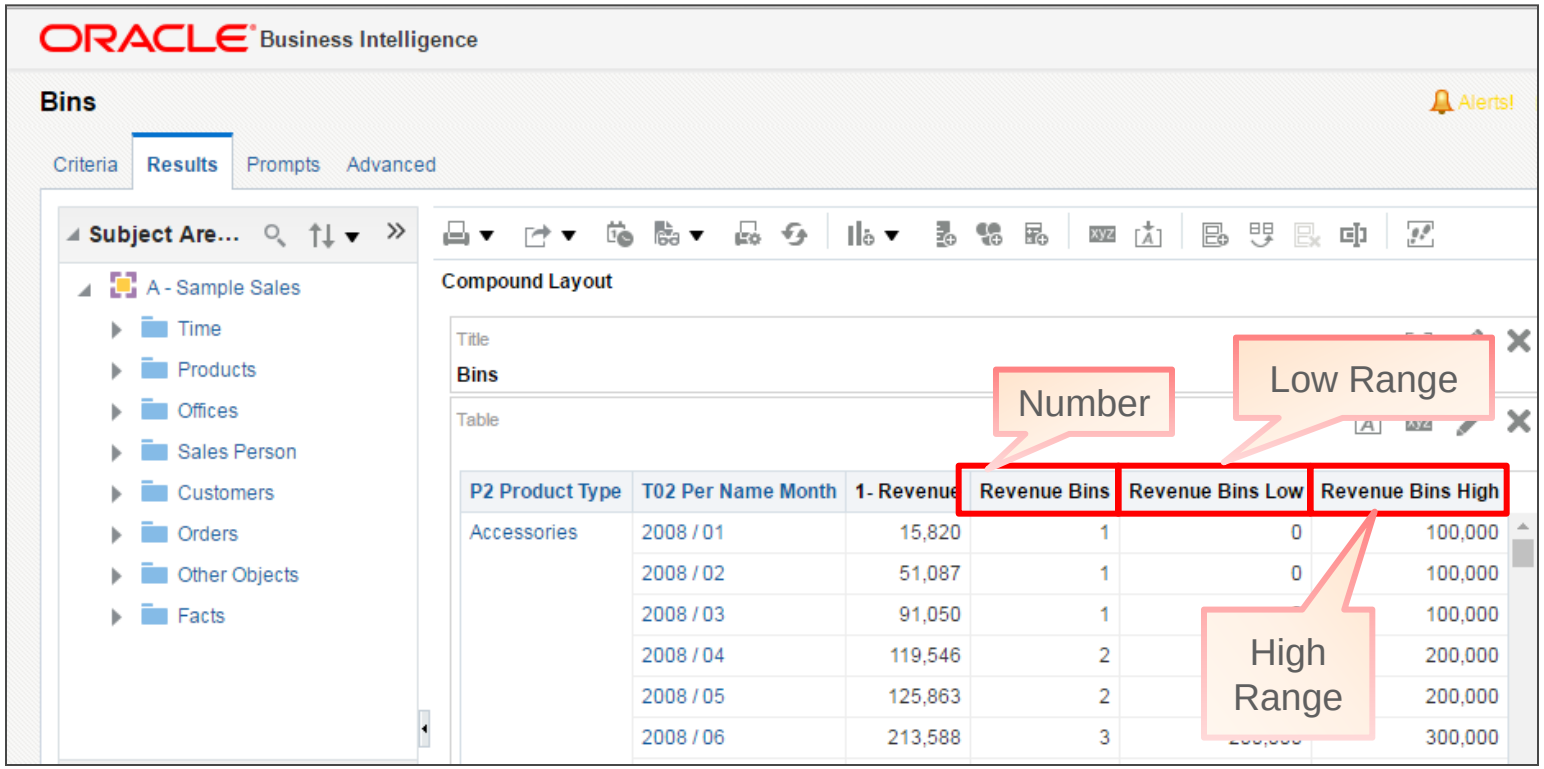
- Users and administrators can create requests by directly calling database functions from either Oracle BI Answers or by using a logical column within the metadata repository.
- Database functions include:
  1) EVALUATE
  2) EVALUATE_ANALYTIC
  3) EVALUATE_AGGR
  4) EVALUATE_PREDICATE

Advance Analytics Internal Logical SQL Functions

- Oracle BI Server supports Logical SQL functions that allow Visual Analyzer users to explore data using models such as binning and trend lines.
- Internal Logical SQL functions include:
  1) BIN
  2) WIDTH_BUCKET
  3) TRENDLINE

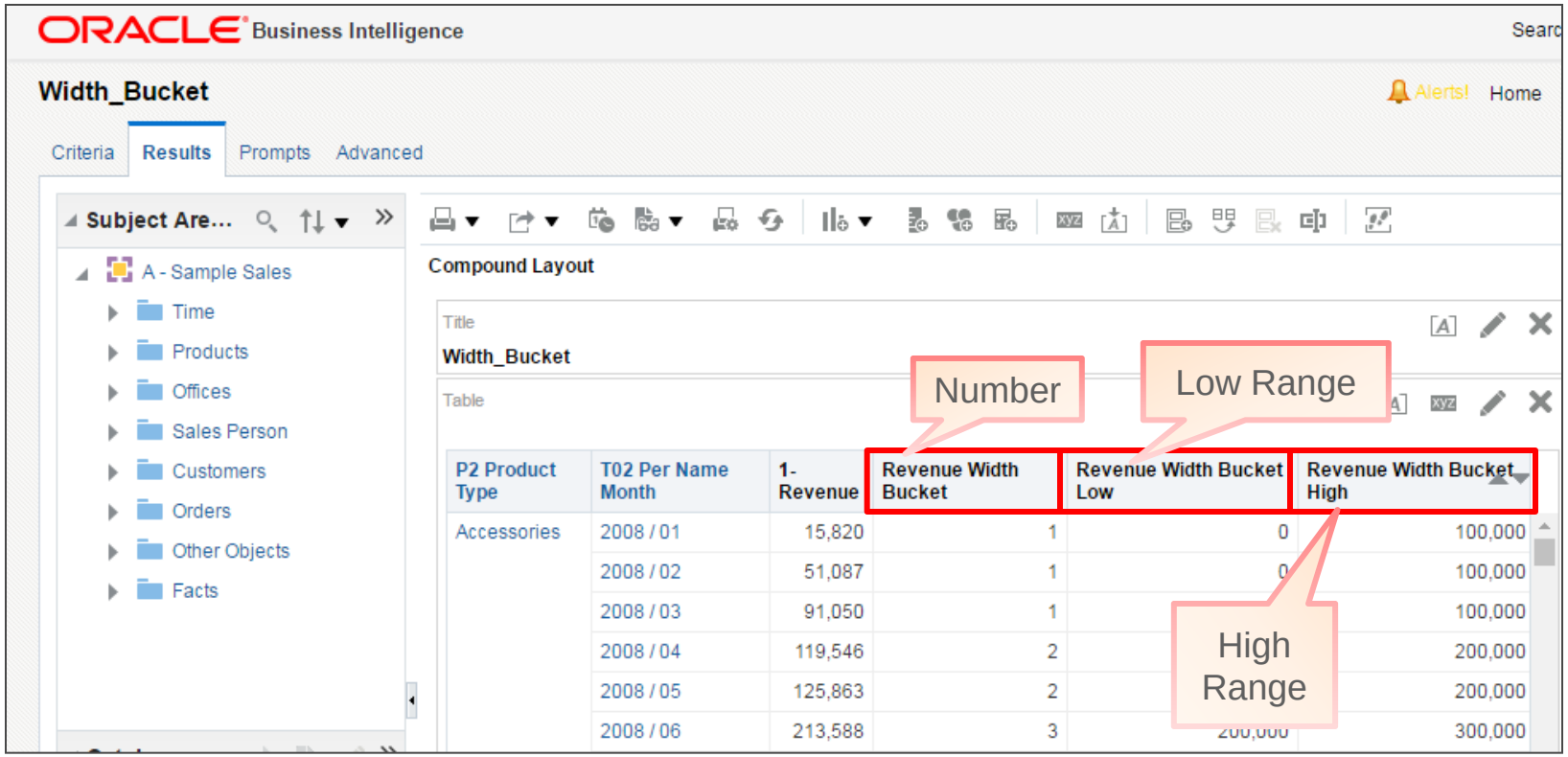
BIN Function

- The BIN function returns Number, Low Range, and High Range.

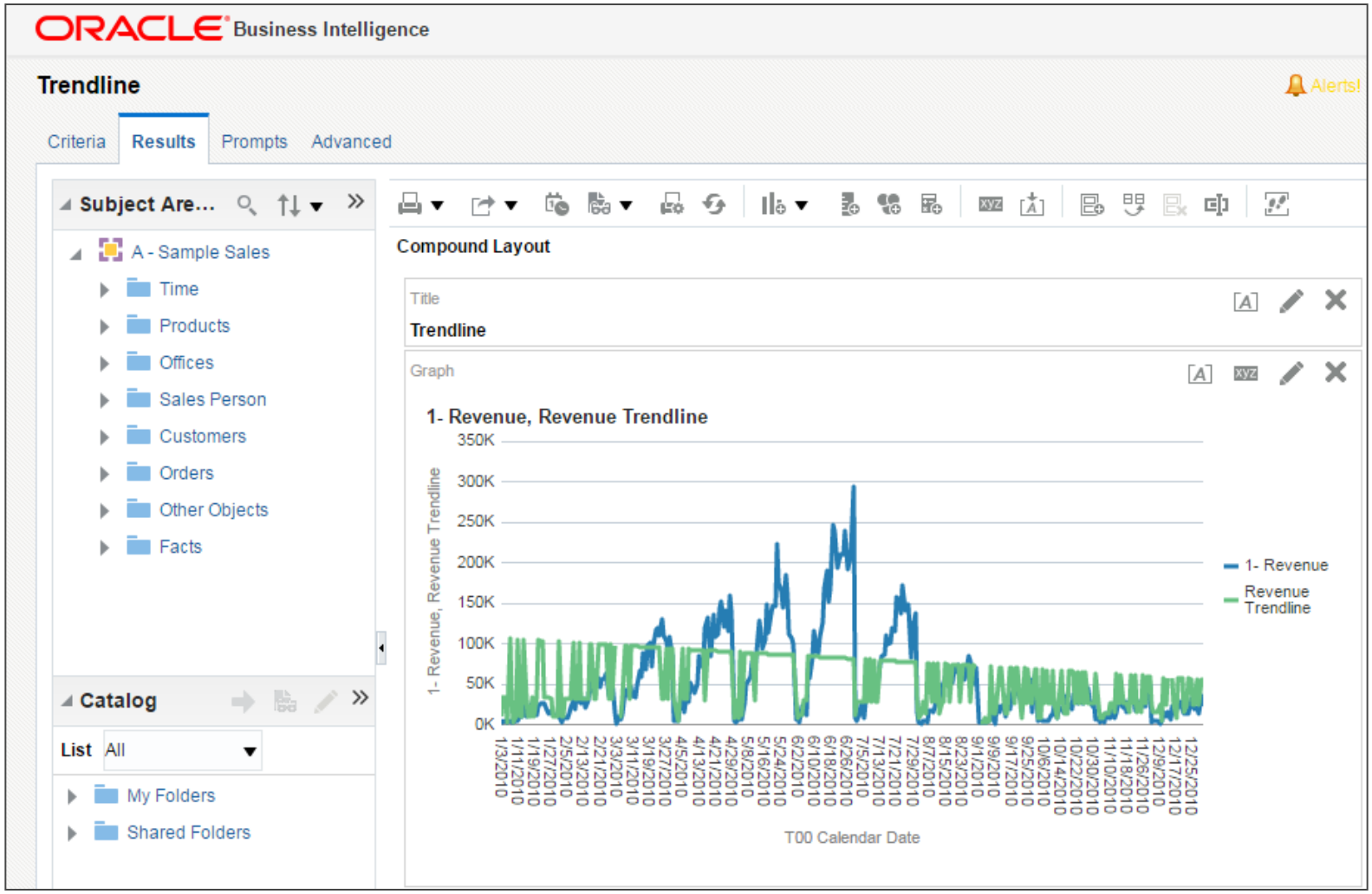


WIDTH_BUCKET Function

- WIDTH_BUCKET returns either the bin number or one of the two end points of the bin interval.



TRENDLINE Function



Advance Analytics External Logical SQL Functions

- Oracle BI Server supports Logical SQL functions that allow Visual Analyzer users to explore data with models such as forecast, cluster, and outlier.
- External Logical SQL functions include:
  1) EVALUATE_SCRIPT
  2) FORECAST
  3) CLUSTER
  4) OUTLIER
  5) REGR

EVALUATE_SCRIPT

If you run your analysis, you can see the sentiment analysis being performed.

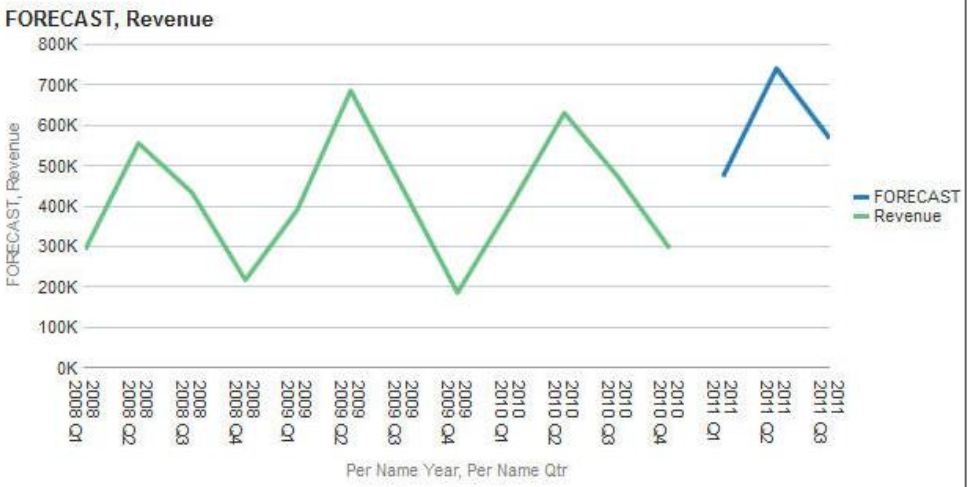
Product Number	Feedback	Sentiment
1	The item was delivered on time and quality was good	positive
2	The clothes didnt fit so I had to send them back, it took ages for the next delivery	positive
3	I recommend the shirts, the fit really well and after 3 months still look good as new	positive
4	Not happy with quality of the materials - my son pulled the jumped and there is now a hole	neutral
5	The clothes are over-priced if you asked me, you can get better quality from Next	neutral
6	Excellent, will definitely shop here again	positive
7	The customer services were poor, I spent ages on the phone and the person who answered did not care	neutral
8	I bought these shirts for my husband and he loved them	positive
9	The shoes are too narrow and uncomfortable	negative

FORECAST

Creates a time-series model of the specified measure over the series

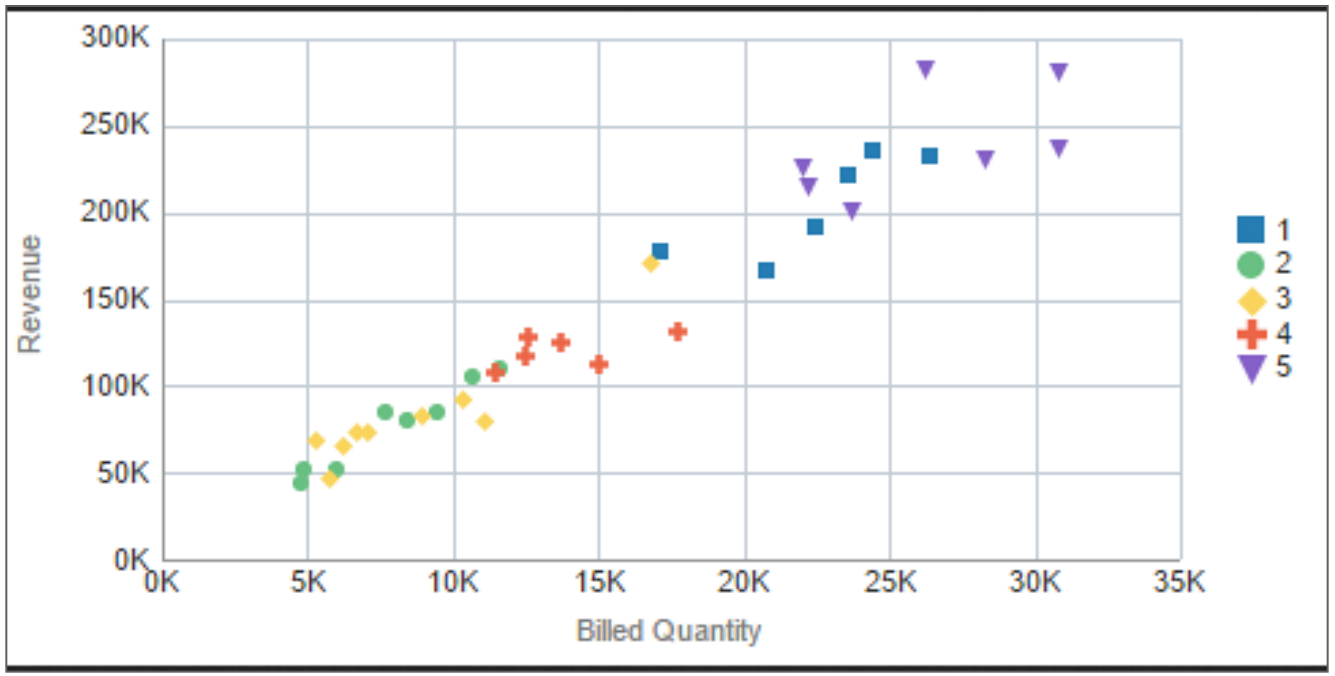
Forecast

Per Name Year	Per Name Qtr	Revenue	FORECAST
2008	2008 Q1	290,786	
	2008 Q2	555,845	
	2008 Q3	434,226	
	2008 Q4	219,143	
2009	2009 Q1	391,001	
	2009 Q2	686,138	
	2009 Q3	435,988	
	2009 Q4	186,873	
2010	2010 Q1	401,285	
	2010 Q2	629,174	
	2010 Q3	475,011	
	2010 Q4	294,530	
2011	2011 Q1		474,061
	2011 Q2		738,681
	2011 Q3		567,454



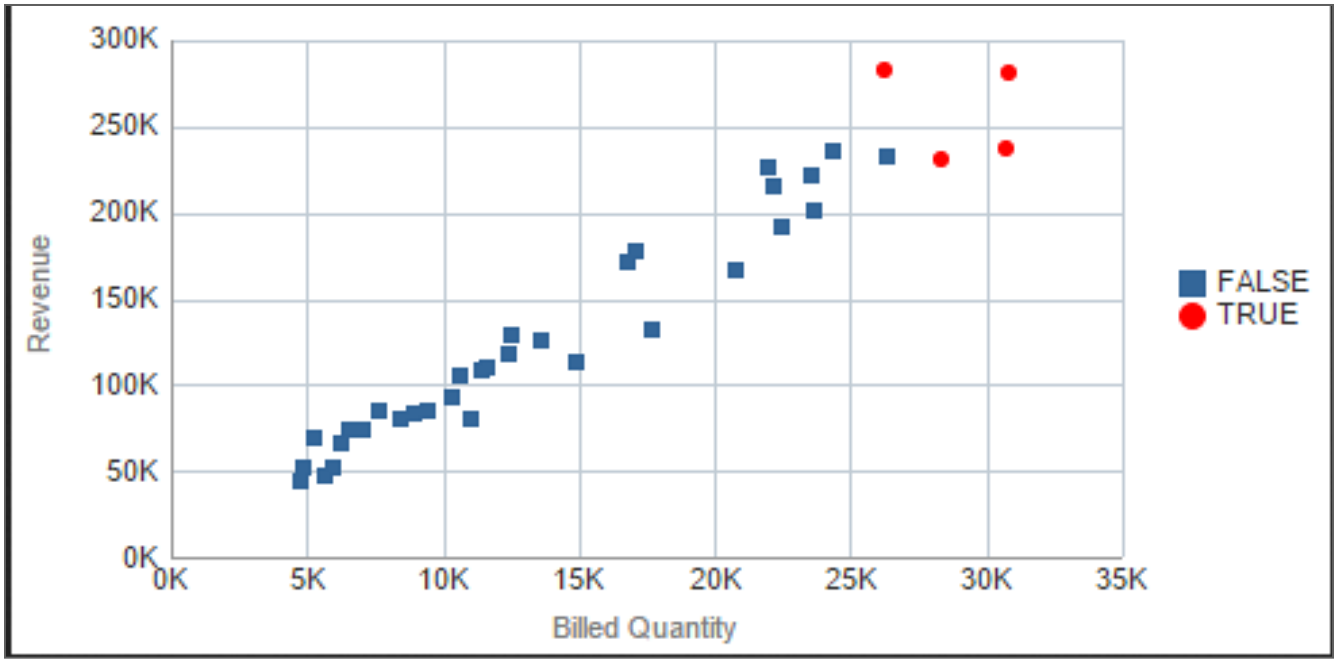
CLUSTER

Collects a set of records into groups based on one or more input expressions



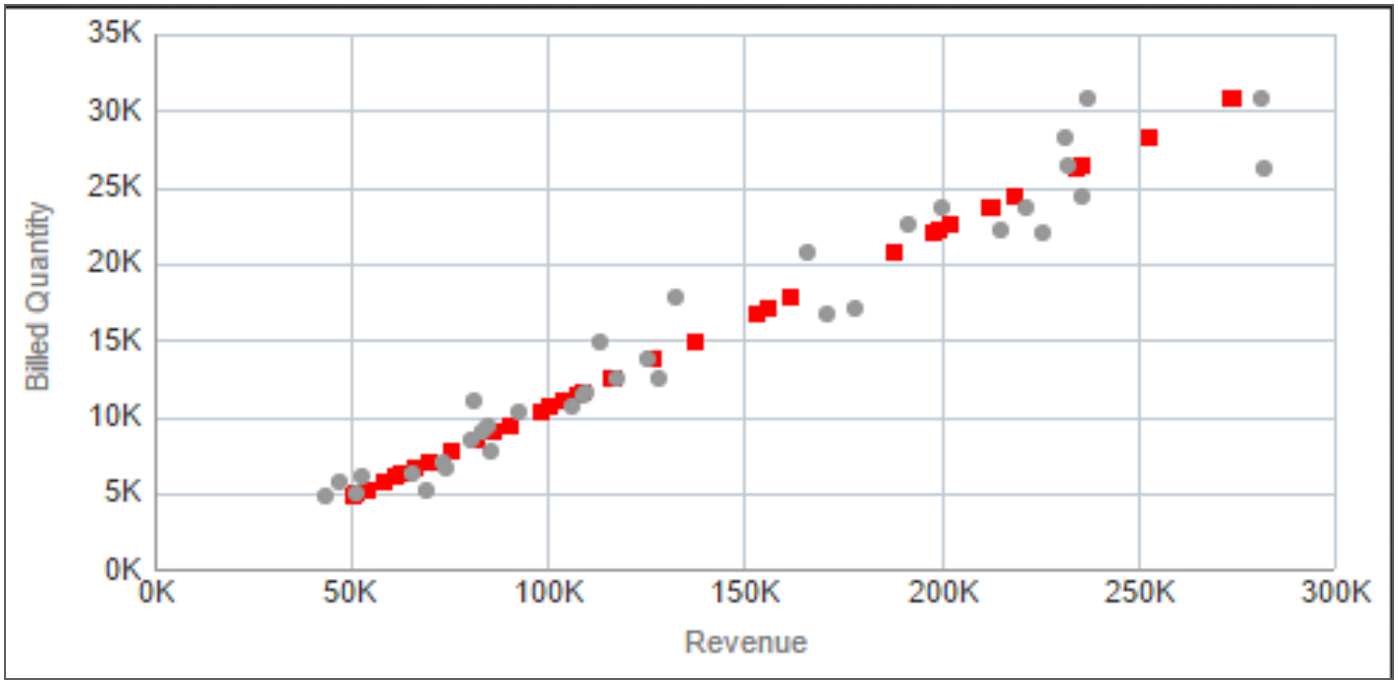
OUTLIER

- The function just returns TRUE or FALSE.



REGR

- Determines correlations or relationships within the data



Quiz: Overview

This quiz examines your knowledge of the various functions in Oracle Business Intelligence.

Quiz

Which of the following can be achieved through Advance Analytics?

a. Predicting customer behavior
b. Analyzing “market baskets” to discover associations, patterns, and relationships
c. Anticipating future product demand

Quiz

The PERIODROLLING function does not have a time series grain.

a. True
b. False

Summary

In this lesson, you should have learned how to use:

- SQL Syntax and Semantics
- Aggregate functions
- Time series functions
- Advance analytics functions

Practice 20: Overview

This practice covers using/creating expressions.