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## A Hands-on Guide

# Modeling Time Series Function in OBIEE Period Rolling Function

BISP is committed to provide BEST learning material to the beginners and advance learners. In the same series, we have prepared a complete end-to-end Hands-on Guide for Modeling Time Series Function in OBIEE. In the same series; we have prepared a complete "OBIEE11g How to Series" build on Sample OBIEE reports and Dashboard. Download our collection of "How to Series" for Oracle BI, Informatica, Data Stage product suite. There are 100s of case studies are available in our blog/site for free access for learners. Join our professional training program to learn from the experts.

#### History:

| Version | Description Change     | Author         | Publish Date             |
|---------|------------------------|----------------|--------------------------|
| 0.1     | Initial Draft          | Kuldeep Mishra | 1 <sup>st</sup> Jul 2012 |
| 0.1     | 1 <sup>st</sup> Review | Amit Sharma    | 5 <sup>th</sup> Jul 2012 |
|         |                        |                |                          |
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|         |                        |                |                          |

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### Period Rolling Function

SQL does not provide a direct way to make time comparisons; you must model time series data in the Oracle BI repository. First, set up time dimensions based on the period table in your data warehouse. Then, you can define measures that take advantage of this time dimension to use the AGO, TODATE, and PERIODROLLING functions. At query time, the Oracle BI Server then generates highly optimized SQL that pushes the time offset processing down to the database whenever possible, resulting in the best performance and functionality.

The PERIODROLLING function lets you perform an aggregation across a specified set of query grain periods, rather than within a fixed time series grain. The most common use is to create rolling averages,

Step1 :- Click on New→Analysis then chose subject area from Select Subject Area. Below window will open, Select tables column from left side Subject Area pane within Criteria. Here we can double click on tables column or drag and drop tables column from Subject Area pane to Selected Columns pane as below.

| Untitled   |  |  | 💄 Alerts! Ho           | me Catalog      | Dashboards 🗸       | New 🗸           | 🔁 Open 🗸 🚽      | Signed In As weblogic v      |
|--|--|--|------------------------|-----------------|--------------------|-----------------|-----------------|------------------------------|
| Criteria Results Prompts A   | dvanced  |  |                        |                 |                    |                 |                 |                              |
| 🗆 Subject Areas 🛛 🖓 🖓 🗸 🆓  | A 18   |  |                        |                 |                    |                 |                 |                              |
| 🖃 🍈 A - Sample Sales   | Selected Columns   |  |                        |                 |                    |                 |                 | Q 🍇                          |
| <ul> <li> <sup>™</sup> Time      </li> <li> <sup>™</sup> Products         </li> <li> <sup>™</sup> Offices         </li> <li> <sup>™</sup> Sales Person         </li> </ul> | Double click on column names in the Subject<br>sorting, or delete by clicking or hovering ov | Areas pane to add them to the analy<br>er the button next to its name. | ysis. Once added, drag | and-drop column | ns to reorder then | n. Edit a colum | n's properties, | , formula and filters, apply |
| Customers  | TOS Per Name Year 🗮 📄 P1 Product 🗄   | 1- Revenue 🗮 🚺 1- Revenue 🗄  |                        |                 |                    |                 |                 |                              |
| E Calculated Facts   |  |  |                        |                 |                    |                 |                 |                              |
| Click-→ Result.  |  |  |                        |                 |                    |                 |                 |                              |
|  |  |  |                        |                 | +                  |                 |                 | 2                            |

|      | P1 Product                | 1- Revenue | 1- Revenue |
|------|---------------------------|------------|------------|
| 2008 | 7 Megapixel Digital Camer | 1,333,824  | 1,333,824  |
|      | Bluetooth Adaptor         | 574,317    | 574,317    |
|      | CompCell RX3              | 654,557    | 654,557    |
|      | Game Station              | 900,273    | 900,273    |
|      | HomeCoach 2000            | 553,753    | 553,753    |
|      | Install                   | 150,435    | 150,435    |
|      | KeyMax S-Phone            | 780,570    | 780,570    |
|      | LCD 36X Standard          | 1,355,263  | 1,355,263  |
|      | LCD HD Television         | 448,804    | 448,804    |
|      | MP3 Speakers System       | 321,835    | 321,835    |
|      | MPEG4 Camcorder           | 1,252,953  | 1,252,953  |
|      | Maintenance               | 148,012    | 148,012    |
|      | MaxiFun 2000              | 738,504    | 738,504    |
|      | MicroPod 60Gb             | 1,733,902  | 1,733,902  |
|      | Plasma HD Television      | 444,916    | 444,916    |
|      | PocketFun ES              | 943,881    | 943,881    |
|      | SoundX Nano 4Gb           | 827,197    | 827,197    |

#### Step2 :-In Time(T05 Per Name Year )→Edit Formula.

Title



Edit Column Formula window will display. Here we Check→Custom Heading ,Check→Contain HTML Markup. Column Heading→Year.

| Edit Column Formula  |  |
|--|--|
| Column Formula Bins  |  |
| Folder Heading<br>Column Heading   | Time Year Custom Headings Contains HTML Markup   |
| Aggregation Rule (Totals Row)  | Default (None)   |
| Available  | Column Formula   |
| A - Sample Sales     Define     Define | f()     Filter     Column ~     Variable ~     +     -     x     /     %     (     )   |
| Help   |  |
| Edit Column Formula wind<br>HTML Markup. Column He   | duct )→Edit Formula.<br>Base Facts<br>1 - Revenue :: 1 - Revenue ::<br>Sort ><br>Edit formula<br>Column Properties<br>Filter<br>Delete<br>ow will display. Here we Check→Custom Heading ,Check→Contain<br>ading→Product. |
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| Edit Column Formula   |   |   | 8  |
|---|---|---|--|
| Column Formula Bins   |   |   |  |
| Folder Heading  | Produc  | ts  |  |
| Column Heading  | Produc  | t   |  |
|   | Cu:   | ston  | 1 Headings   |
| Aggregation Bule (Totals Bow)   | Defaul  | ntaii<br>+ (N                                 | as HTML Markup   |
| Available   | Derau   | L ( I V                                       | Column Formula   |
| Subject Areas   |   |   | "Products"."P1 Product"  |
| <ul> <li>M - Sample Sales</li> <li>Time</li> <li>Products</li> <li>Offices</li> <li>Sales Person</li> <li>Customers</li> <li>Orders</li> <li>Other Objects</li> <li>Base Facts</li> <li>Calculated Facts</li> </ul> |   | ۶   | $f(\cdot)$ Filter Column - Variable - $t = x - (-96) (-1)$   |
|   |   |   |  |
| Help  |   |   | OK Cancel  |
| Click→Ok.<br>Step4:-In Products(P1 Prod<br>Time Products<br>Year :: Product ::<br>Product ::<br>Product ::<br>Year :: Product ::<br>Year :: Product ::<br>Year :: Product ::<br>New Eilter window will disc         | duct) -> Base Base I 1-F Sort Edit f Colum Filter Delet | Fil<br>Fac<br>Fac<br>Fac<br>Fac<br>Fac<br>Fac | ter.<br>ts<br>nue : 1 - Revenue :<br>ula<br>roperties<br>ue select Operator is equal to ( is in Value i Game |
| Station.  | лау. П <sup>е</sup>                                     | ie l  |  |
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| New Filter  |   | ×                                    |  |                            |
|---|---|--------------------------------------|--|----------------------------|
| Column  | P1 Product 1  |                                      |  |                            |
| Operator  | is equal to / is in   |                                      |  |                            |
| Value   |   |                                      |  |                            |
|   | 7 Megapixel Digital Camer All   |                                      |  |                            |
| Dustact   | Bluetooth Adaptor   | 1                                    |  |                            |
| Protect   | CompCell RX3  |                                      |  |                            |
| Convert   | Game Station  |                                      |  |                            |
|   |   |                                      |  |                            |
|   | KeyMax S-Phone  |                                      |  |                            |
|   | LCD 36X Standard  |                                      |  |                            |
|   | Search  |                                      |  |                            |
| Help  |   | OK Cancel                            |  |                            |
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| Click→Ok.   |   |                                      |  |                            |
| Here we see                                       | the applied filter  |                                      |  |                            |
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| Selected Columns                                  |   |                                      |  | Q 8                        |
| Double click on column<br>sorting, or delete by c | names in the Subject Areas pane to add them to th<br>licking or hovering over the button next to its name.    | e analysis. Once added, drag-and-dro | op columns to reorder them. Edit a column's properties       | , formula and filters, app |
| Time  | B B B B B B B B B B B B B B B B B B B   |                                      |  |                            |
| Year 🗮 🗐 Produce                                  | ct 🗮 📋 1- Revenue 🗮 📋 1- Revenue 🗮  |                                      |  |                            |
|   |   |                                      |  |                            |
|   |   |                                      |  |                            |
| Filters   |   |                                      |  | VP 🗱 🗄                     |
| oy clicking on add butto                          | sis criteria by clicking on Filter option for the specifi<br>on after selecting its name in the catalog pane. | ic column in the Selected Columns pa | ne, or by clicking on the filter button in the Filter pane : | beader. Add a saved filte  |
| 🦷 P1 Product is equa                              | l to / is in Game Station   |                                      |  |                            |
|   |   |                                      |  |                            |
|   |   |                                      |  |                            |
| Step5:-In Bas                                     | e Facts(1- Revenue )→Edit Formu   | ula.                                 |  |                            |
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| Time          | Products          | Base Fac                | cts  |
|---------------|-------------------|-------------------------|--|
| 目 Year 🗮      | 目 Product 🗮       | 📙 1- Rev                | enue 🚌 📘 1- Revenue 🗮  |
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|               |                   |                         | B Edit formula   |
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| Column Fo     | rmula Bins        |                         |  |
|               | Folder Heading    | Base Facts              | S  |
|               | Column Heading    | Revenue                 |  |
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|               |                   | 🗹 Contai                | ns HTML Markup   |
| Aggregation R | tule (Totals Row) | Default (S              | um) 🗾  |
| Available     |                   |                         | Column Formula   |
| Subject Are   | as                |                         | "Base Facts"."1- Revenue"  |
| 🗉 🎁 A - Sar   | nple Sales        |                         |  |
| ± m           | ducts             |                         |  |
| 🗄 🛅 Off       | ices              |                         |  |
| E Sal         | es Person         |                         |  |
| E Ord         | lers              |                         |  |
| 🗉 🛅 Oth       | er Objects        | ×                       |  |
| E Bas         | se Facts          |                         |  |
|               | curated racts     |                         | $f(\cdot)$ Filter Column $\chi$ Variable $\chi$ + - x ( % ( ) II |
|               |                   |                         |  |
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| Help          |                   |                         | OK Cancel  |
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| Click→Ok.     |                   |                         |  |
|               |                   |                         |  |
| Step6:-In Ba  | ase Facts(1- Re   | venue ) <del>&gt;</del> | Edit Formula.  |
|               |                   |                         |  |
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| , perior      | 0                 |                         |  |
|               |                   |                         |  |

| Time                     | Products                   | Base Fac               | ts                         |                         |                |           |
|--------------------------|----------------------------|------------------------|----------------------------|-------------------------|----------------|-----------|
| 📒 Year 🗮                 | 目 Product 🗮                | Reven                  | ue 🗮 📙 1- Revenue          | <b>E</b>                |                |           |
|                          |                            |                        |                            | ♦ Sort >                |                |           |
|                          |                            |                        |                            | 🚱 Edit formula          |                |           |
|                          |                            |                        |                            | Column Properties       |                |           |
|                          |                            |                        |                            | 👎 Filter                |                |           |
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| Edit Colum               | n Formula win              | dow will c             | isplay. Here we Ch         | eck→Custom Heading      | ,Check→Contain |           |
| HTML Mark                | up. Column He              | eading $\rightarrow$ 3 | -Period Rolling Sum        |                         |                |           |
|                          | ·                          | Ū.                     | C                          |                         |                |           |
| Click→Func               | tion                       |                        |                            |                         |                |           |
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| Edit Column I            | Formula                    |                        |                            |                         |                | ×         |
| Column Fo                | rmula Bins                 |                        |                            |                         |                |           |
|                          |                            | ·                      |                            |                         |                |           |
|                          | Folder Heading             | Base Fact              | 3                          |                         |                |           |
|                          | Column Heading             | 3-Period R             | olling Sum                 |                         |                |           |
|                          |                            | Custor                 | n Headings                 |                         |                |           |
|                          |                            | 🗹 Contai               | ns HTML Markup             |                         |                |           |
| Aggregation F            | Rule (Totals Row)          | Default                | •                          |                         |                |           |
| Available                |                            |                        | Column Formula             |                         |                |           |
| Subject Are              | as                         |                        | "Base Facts"."1- Revenu    | e"                      |                |           |
| 🗆 🕅 A - Sar<br>= 🗎 🌐 Tim | mple Sales                 |                        |                            |                         |                |           |
| E Pro                    | ducts                      |                        |                            |                         |                |           |
| 🗄 🛅 Off                  | īces                       |                        |                            |                         |                |           |
| E Sal                    | les Person                 |                        |                            |                         |                |           |
|                          | ders                       |                        |                            |                         |                |           |
| 🗄 🗄 Ott                  | per Objects                | ×                      |                            |                         |                |           |
| E Ba:                    | se Facts<br>Iculated Eacts |                        |                            |                         |                |           |
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| Help                     |                            |                        |                            |                         |                | OK Cancel |
| Пер                      |                            |                        |                            |                         |                |           |
| After Clieb              | No.                        |                        | a a su in datus suill dian | lau hana wa salaat Fun  | ation Deviad   |           |
|                          | <b>7</b> Function. Ins     | ert Functi             | on window will disp        | lay. here we select fun | ction-Period   |           |
| Rolling.                 |                            |                        |                            |                         |                |           |
| Syntax -> PEI            |                            | measure                | v [ v])                    |                         |                |           |
| Syntax 7 TEI             |                            | neasure,               | ~ [, y]]                   |                         |                |           |
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|                          |                            |                        |                            |                         |                |           |
|                          |                            |                        |                            |                         |                |           |

Where  $\rightarrow$  measure is the name of a measure column. x x is an integer that specifies the offset from the current time .y specifies the number of time units over which the function will compute. hierarchy is an optional argument that specifies the name of a hierarchy in a time dimension, such as yr, mon , day, that you want to use to compute the time window.

Example  $\rightarrow$  PERIODROLLING(monthly\_sales, -1, 1)

Description  $\rightarrow$  This function computes the sum of a measure over the period starting x units of time and ending y units of time from the current time. The unit of time is determined by the measure level of the measures in its first argument and the query level of the query to which the function belongs. For more information, click Help.

| Insert Func   | tion  |                       |   |
|---------------|---|-----------------------|---|
| Functions     | * String   * Math   * Calendar/Date   * Conversion   * Conversions   * Expressions   * DB Functions   * DB Functions   * Time Series Calculation   * Ago   * To Date  |                       |   |
| Selected      | Period Rolling  |                       |   |
| Syntax        | PERIODROLLING(measure, x [,y])  |                       |   |
| Where         | measure is the name of a measure column.  |                       |   |
| Example       | PERIODROLLING(monthly_sales, -1, 1)   |                       |   |
| Description   | This function computes the sum of a measure<br>over the period starting x units of time and<br>ending y units of time from the current time.<br>The unit of time is determined by the measure<br>level of the measures in its first argument and<br>the query level of the query to which the<br>function belongs. For more information, click<br>Help. |                       |   |
| Help          | OK Cancel   |                       |   |
| Click→Ok.     |   |                       |   |
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| dit Column Formula              |  |
|---------------------------------|--|
| Column Formula Bins             |  |
| Folder Headin                   | ng Base Facts  |
| Column Headin                   | ag 3-Period Rolling Sum  |
|                                 | Custom Headings  |
| Aggregation Rule (Totals Row    | Contains HTML Markup   |
| Available                       | Column Formula   |
| Subject Areas                   | PERIODROLLING("Base Facts"."1- Revenue", - 2,0)                    |
| 🗆 🍈 A - Sample Sales            |  |
| 🗄 🛅 Time<br>🗄 🛅 Products        |  |
| Offices      Sales Person       |  |
| E Customers                     |  |
| 🗄 🛅 Orders<br>🗄 🎦 Other Objects | >  |
| Base Facts                      |  |
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|                                 | f() Filter Column $\checkmark$ Variable $\checkmark$ + - x / % ( ) |
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| Help                            | OK Can   |
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| Selected Col                            | umns  |   |   | Q 1  |
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| Double click on<br>sorting, or dele     | column names in the St<br>te by clicking or hoveri    | ubject Areas pane (<br>ng over the button     | o add them to the analysis. Once added<br>next to its name. | drag-and-drop columns to reorder them. Edit a column's properties, formula and filters, app  |
| Time                                    | roducts Base Fac                                      | rts   |   |  |
| 🛯 Year 🗮 📘                              | Product 🗮 📋 Reven                                     | ue 🗮 📘 3-Period I                             | Rolling Sum 🗮   |  |
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| ∃ Filters                               |   |   |   | YP ₩   |
| Add filters to the<br>by clicking on ad | e analysis criteria by cl<br>1d button after selectin | icking on Filter opti<br>g its name in the ca | on for the specific column in the Selecte<br>talog pane.    | Columns pane, or by clicking on the filter button in the Filter pane header. Add a saved fil |
| Des dust is a                           |   | ,   | and hand.   |  |
| Y Product is e                          | qual to / is in Game :                                | Station                                       |   |  |
|   |   |   |   |  |
| Step7:- C                               | Click→Result  |   |   |  |
|   |   |   |   |  |
| Title                                   |   |   |   |  |
| Yearly                                  | Product Rev   | enue  |   |  |
| Using Pe                                | eriod Rolling Fund                                    | tion  |   | 1  |
| Table                                   |   |   | 🗖 🧷 🎽   |  |
|   |   |   |   |  |
|   |   | 1   |   |  |
| Year                                    | Product   | Revenue                                       | 3-Period Rolling Sum  |  |
| 2008                                    | Game Station  | 900,273                                       | 900,273   |  |
| 2009                                    | Game Station  | 920,431                                       | 1,820,703   |  |
| 2010                                    | Game Station  | 935,819                                       | 2,756,523   |  |
| 2011                                    | Game Station  |   | 1,856,250   |  |
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