



IBM Software Group

IBM WebSphere® Data Interchange V3.3

Variables and Accumulating totals



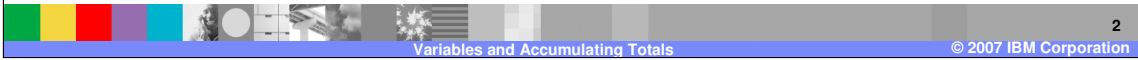
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This presentation will demonstrate how to accumulate totals in a Send or Receive Map.

Agenda

- Review global and local variables
- Demonstrate how to obtain totals



The presentation will review global and local variables and demonstrate how to obtain totals.

Variables and Accumulating Totals

- Variables
 - ▶ Global, local, and special
 - ▶ Hold values for data manipulation
 - ▶ Variable name maximum length is 16
 - ▶ Maximum length for a value 900 characters
- First character cannot be:
 - ▶ A numeric digit (0 through 9).
 - ▶ The letter P. These variables are reserved for future use.
 - ▶ The letters DI. These variables are reserved for WebSphere Data Interchange.
 - ▶ An ampersand (&), so they do not get confused with special literals.
 - ▶ A left parenthesis, so they do not get confused with the start of an expression.



Map variables are used like variables in any programming language. They are an integral part of the WebSphere Data Interchange mapping command language. Variables are used to hold and manipulate values assigned to them by the user. WebSphere Data Interchange supports three types of variables: *local*, *global*, and *special variables*. A variable can have a maximum length of 900 characters. There are some restrictions on the variable names.

Variables and Accumulating Totals

The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3.3 interface. The main window shows a tree view of data elements for 'WDILAB1 [WDI User Conference 2006 - Lab 1]'. A 'Mapping Data Element Editor - 330' dialog box is open, showing the 'Data Format Path' set to 'LINEITEMS' and the 'Field' set to 'QTYORDERED'. The 'Accumulators / Actions' section lists global accumulators G0 through G5. The 'Comments' field is empty. The 'Open Automatically When an Element Mapping is Created' checkbox is checked. The system tray at the bottom shows the date and time as Tuesday, 3/6/2007, 12:37 PM.

Global variables can be defined by using the letter 'G' as the first character of the variable name. Global variables will have the scope of session which means the variable is not deleted or reset until the session with the translator is terminated. There are also 10 Global Accumulators available.

Variables and Accumulating Totals

The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3.3 interface. The main window shows a tree view of data elements for 'WDILAB1 [WDI User Conference 2006 - Lab 1]'. A 'Mapping Data Element Editor - 330' dialog box is open, showing the 'Data Format Path' set to 'LINEITEMS' and the 'Field' set to 'QTYORDERED'. The dialog also includes sections for 'Accumulators / Actions' with a list of variables (T0, T1, T2, T3, T4, T5) and buttons for 'Special Handling...', 'Element Attributes...', and 'Field Attributes...'. The system tray at the bottom shows the date as Tuesday, 3/6/2007, and the time as 12:42 PM.

Local variables can be defined by NOT using the letter 'G' as the first character of the variable name. Local variables will have the scope of document which means the variable is deleted with each map execution. There are also 10 Local Accumulators available.

Variables and Accumulating Totals

- Special variables
 - ▶ Predefined
 - ▶ View properties using double click
 - ▶ Begin with characters “DI”
 - DIAPPFIL
 - DIAUTOCC
 - DIERRFILTER



Special variables are a group of predefined variables used by WebSphere Data Interchange (WDI). They function much like local or global variables, except they each have a special purpose. Examples of special variables are DIAPPFIL, DIAUTOCC, and DIERRFILTER.

Section

Accumulating Totals

Variables and Accumulating Totals

The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3.3 interface. The main window shows a Send Map configuration for 'WDILAB1 [WDI User Conference 2006 - Lab 1]'. The left pane shows a tree view of the map structure, including elements like HEADERS, LINEITEMS, RECORDID, QTYORDERED, UNITFORMEAS, UNITPRICE, ITEMDESC, ITEMNUMBER-8N, ITEMCODE1, ITEMNUMBER-81, ITEMCODE2, ITEMNUMBER-8C, ITEMCODE3, ITEMNUMBER-8P, ITEMCODE4, and TRAILER. The right pane shows the map details, including loops and a PO1 loop qualified by the path of LINEITEMS. A 'Mapping Data Element Editor - 350' dialog box is open, showing the configuration for the PO1 loop. The dialog box has a 'Data Format Path' field, a 'Field' dropdown, and a 'Literal or Mapping Command' field. The 'Accumulators / Actions' section is configured with 'TO' as the accumulator and 'Increment the accumulator, then map it' as the action. The 'Comments' field is empty. The 'Open Automatically When an Element Mapping is Created' checkbox is checked. The bottom of the screen shows the Windows taskbar with the date and time as Tuesday, 3/6/2007, 12:49 PM.

In this example you will accumulate the total line items mapped to the PO1 Loop and map this to the total to the CTT Segment in the target document. This is a Send map and the PO1 Loop will have a Multiple Occurrence or Path Qualification under the PO1 Loop. You can use a Local Accumulator T0 and select the action of Increment, then map the accumulator later. Or you can use a variable and the literal or command line to accumulate a total and map it later.

Variables and Accumulating Totals

The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window shows a tree view of a map structure for 'WDI User Conference 2006 - Lab 1'. The tree includes elements like 'HEADER', 'LINEITEMS', 'RECORDID', 'QTYORDERED', 'UNITOFMEAS', 'UNITPRICE', 'ITEMDESC', 'ITEMNUMBER-8N', 'ITEMCODE1', 'ITEMNUMBER-81', 'ITEMCODE2', 'ITEMNUMBER-8C', 'ITEMCODE3', 'ITEMNUMBER-8P', 'ITEMCODE4', and 'TRAILER'. A 'Mapping Data Element Editor - 350' dialog box is open, showing the 'Literal or Mapping Command' field with the expression: `&SET LineItemCount &E[LineItemCount + 1]`. The 'Accumulators / Actions' section contains several dropdown menus. The 'Comments' field is empty. The 'Open Automatically When an Element Mapping is Created' checkbox is checked. The system tray at the bottom shows the date as Tuesday, 3/6/2007, and the time as 12:50 PM.

To accumulate the total line items using a Local Variable `LineItemCount` you can use an expression.

Variables and Accumulating Totals

The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3.3 interface. The main window is titled "WebSphere Data Interchange for Multiplatforms V3.3.3 - [WDI33Server - Send Map - WDI33CONLAB1_S850]". A "Mapping Data Element Editor - 354" dialog box is open, showing the configuration for mapping a data element. The "Accumulators / Actions" section is active, with "TO" selected in the "Accumulator" dropdown and "Map the Accumulator" selected in the "Action" dropdown. The "Field" dropdown is empty. The "Comments" field is empty. The "Open Automatically When an Element Mapping is Created" checkbox is checked. The background tree view shows a hierarchy of data elements, including "CTT [Transaction Totals]" and "M 354 [Number of Line Items]". The system tray at the bottom shows the date as Tuesday, 3/6/2007, and the time as 12:54 PM.

You can map the total number of line items to the CTT segment using the Local Accumulator T0 and selecting the Map the accumulator action.

Variables and Accumulating Totals

The screenshot shows the 'Mapping Data Element Editor - 354' dialog box. The 'Literal or Mapping Command' field is set to '&USE LineItemCount'. The 'Accumulators / Actions' section has several dropdown menus. The 'Comments' field is empty. The 'Open Automatically When an Element Mapping is Created' checkbox is checked. The right pane shows a tree view of the data structure, including CTT (Transaction Totals) and Special Handling segments.

You can map the variable LineItemCount to the CTT segment using the &Use keyword.

Variables and Accumulating Totals

The screenshot shows the 'Mapping Data Element Editor - 212' dialog box in the WebSphere Data Interchange for Multiplatforms V3.3.3 application. The dialog is used to map data from a source path to a target field. The source path is 'LINEITEMS' and the target field is 'UNITPRICE'. The dialog includes sections for 'Data Format Path', 'Field', 'Literal or Mapping Command', 'Accumulators / Actions', and 'Comments'. The 'Accumulators / Actions' section is currently empty. The 'Comments' section contains the text '&SAVE UnitPrice'. The dialog also has buttons for 'Special Handling...', 'Element Attributes...', 'Field Attributes...', 'OK', 'Insert', and 'Cancel'. A checkbox at the bottom is labeled 'Open Automatically When an Element Mapping is Created'.

In this example you will accumulate the total price from the line item loop and map that total to the AMT segment. You can use the &SAVE command to accumulate the total in the Local Variable TotalPrice. First you need to save the unit price to a local variable UnitPrice using the &SAVE keyword.

Variables and Accumulating Totals

WebSphere Data Interchange for Multiplatforms V3.3.3 - [WDI33Server - Send Map - WDI33CONFLAB1_S850]

Mapping Data Element Editor - 212

Data Format Path

Field

Literal or Mapping Command
@SET TotalPrice @E(TotalPrice + UnitPrice)

Accumulators / Actions

Special Handling...

Element Attributes...

Field Attributes...

OK

Insert

Cancel

Open Automatically When an Element Mapping is Created

Ready

1:02 PM Tuesday 3/6/2007

Variables and Accumulating Totals © 2007 IBM Corporation 13

Next you need to accumulate the Total Price using the variable TotalPrice and the variable UnitPrice.

Variables and Accumulating Totals

WebSphere Data Interchange for Multiplatforms V3.3 - [WDI33Server - Send Map - WDI33CONFLAB1_S850]

Mapping Data Element Editor - 782

Data Format Path: [Empty]

Field: [Empty]

Literal or Mapping Command: [&USE TotalPrice]

Accumulators / Actions: [Empty]

Comments: [Empty]

Open Automatically When an Element Mapping is Created

Buttons: OK, Insert, Cancel, Special Handling..., Element Attributes..., Field Attributes...

Tree View:

- 20 O AMT [Monetary Amount]
- 1 M 522 [Amount Qualifier Code]
- 2 M 782 [Monetary Amount]
- TOTALBUCKS in TRAILER
- 3 O 478 [Credit/Debit Flag Code]

Now you can map the Local Variable TotalPrice to the AMT segment.

Variables and Accumulating Totals

The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window shows a tree view of data elements for a 'WDI User Conference 2006 - Lab 1' dataset. A 'Mapping Data Element Editor' dialog box is open, showing the configuration for the 'UNITPRICE' field. The dialog includes the following fields and options:

- Data Format Path:** LINEITEMS
- Field:** UNITPRICE
- Literal or Mapping Command:** (empty)
- Accumulators / Actions:** T1 (selected), Add to the Accumulator (selected)
- Special Handling...** (button)
- Element Attributes...** (button)
- Field Attributes...** (button)
- Comments:** (text area)
- Open Automatically When an Element Mapping is Created:** (checked)

The Windows taskbar at the bottom shows the system clock as 1:08 PM on Tuesday, 3/6/2007. The slide footer contains the text 'Variables and Accumulating Totals' and '© 2007 IBM Corporation'.

With this example you will accumulate the total price from the line item loop and map that total to the AMT segment using a Local Accumulator T1.

Variables and Accumulating Totals

The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3 interface. A dialog box titled "Mapping Data Element Editor - 782" is open, showing the configuration for mapping a data element. The "Accumulators / Actions" section is active, with "T1" selected in the dropdown menu and "Map the Accumulator" chosen as the action. The "Comments" field is empty. The "Open Automatically When an Element Mapping is Created" checkbox is checked. The background shows a tree view of data elements, including "TOTALBUCKS IN TRAILER" and "AMT [Monetary Amount]".

Now you can map the Local Accumulator T1 to the AMT segment.

Variables and Accumulating Totals

The screenshot displays the IBM WebSphere Data Interchange for Multiplatforms V3.3 interface. The main window is titled "WebSphere Data Interchange for Multiplatforms V3.3 - [WDI33Server - Send Map - WDI33CONFLAB1_S850]". A "Mapping Data Element Editor - 782" dialog box is open, showing the configuration for a data element. The dialog includes a tree view on the left with elements like "WDILAB1 [WDI User Conference]", "HEADER [Header Record WDI]", "LINEITEMS [LineItems Record WDI]", "RECORDID [WDI User Con]", "QTYORDERED [WDI User", "UNITOFMEAS [WDI User C", "UNITPRICE [WDI User Co", "ITEMDESC [WDI User Con", "ITEMNUMBER-SP [WDI Use", "ITEMCODE1 [WDI User Cd", "ITEMNUMBER-B1 [WDI Usa", "ITEMCODE2 [WDI User Cd", "ITEMNUMBER-SC [WDI Usa", "ITEMCODE3 [WDI User Cd", "ITEMNUMBER-BP [WDI Usa", and "ITEMCODE4 [WDI User Cd". The dialog also has a "Data Format Path" field, a "Field" dropdown, and a "Literal or Mapping Command" field containing "&T1". The "Accumulators / Actions" section has several dropdown menus. The "Comments" field is empty. The "Open Automatically When an Element Mapping is Created" checkbox is checked. The background shows a tree view of data elements, including "7 0 352 [Description]", "20 0 AMT [Monetary Amount]", "1 M 522 [Amount Qualifier Code]", "2 M 782 [Monetary Amount]", "TOTALBUCKS in TRAILER", "Literal of : \$USE TotalPrice", "Literal of: \$T0", and "3 0 478 [Credit/Debit Flag Code]". The system tray at the bottom shows the date and time as "Tuesday 3/6/2007 1:13 PM".

Accumulators can also be mapped using the keyword associated with the accumulator by using the ampersand followed by the accumulator.

Variables and Accumulating Totals

- Accumulators
 - ▶ Predefined
 - ▶ Each accumulator holds a maximum of 31 digits.
 - ▶ Each data element mapping can support up to 4 accumulators.
 - ▶ You can use up to 10 transaction accumulators for a transaction.
 - ▶ You can use up to 10 global accumulators for an entire translation session.
 - ▶ Each has an associated keyword '&' + Accumulator



Accumulators are pre-defined T0 – T9 and G0 – G9. Each can hold a maximum of 31 digits and each have an associated keyword beginning with an ampersand followed by the accumulator name.

Variables and Accumulating Totals

- Accumulator Actions
 - ▶ Increment the accumulator - Adds 1 to the value stored in the accumulator.
 - ▶ Map the accumulator - Maps the value stored in the accumulator to the data element for Send maps and to the application field for Receive maps.
 - ▶ Zero the accumulator - Sets the accumulator value to 0.
 - ▶ Map the accumulator and then increment it - Maps the value stored in the accumulator to the data element for Send maps and to the application field for Receive maps, and then adds 1 to that value. Only one accumulator can be mapped on any given mapping.
 - ▶ Increment the accumulator and then map it - Adds 1 to the value stored in the accumulator, and then maps the value stored in the accumulator to the data element for Send maps and to the application field for Receive maps.



Accumulator Actions include mapping, incrementing, and resetting the value.

Variables and Accumulating Totals

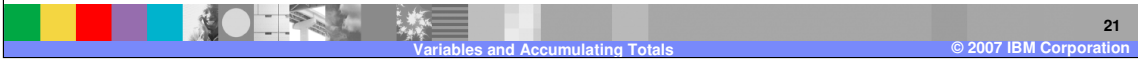
- Accumulator Actions
 - ▶ Add to the accumulator and then map it - Adds the value of an element or field, and then maps the value stored in the accumulator to the data element for Send maps and to the application field for Receive maps.
 - ▶ Map the accumulator and then add to it - Maps the value stored in the accumulator to the standard data element for Send maps and to the application field for Receive maps, and then adds the value of a data element or field to it.



Accumulator actions can also accumulate values and map.

Reference

- More information can be found in the WDI V3.3 Mapping Guide.



More information can be found in the WebSphere Data Interchange Version 3.3 Mapping Guide.

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