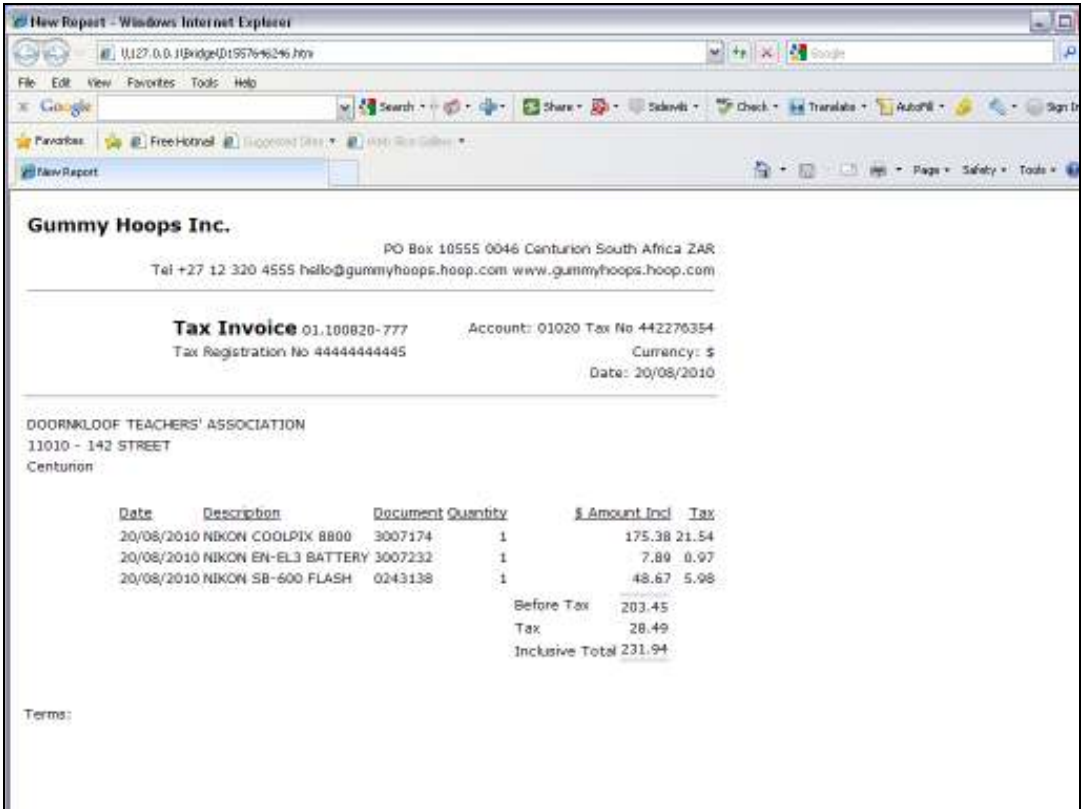
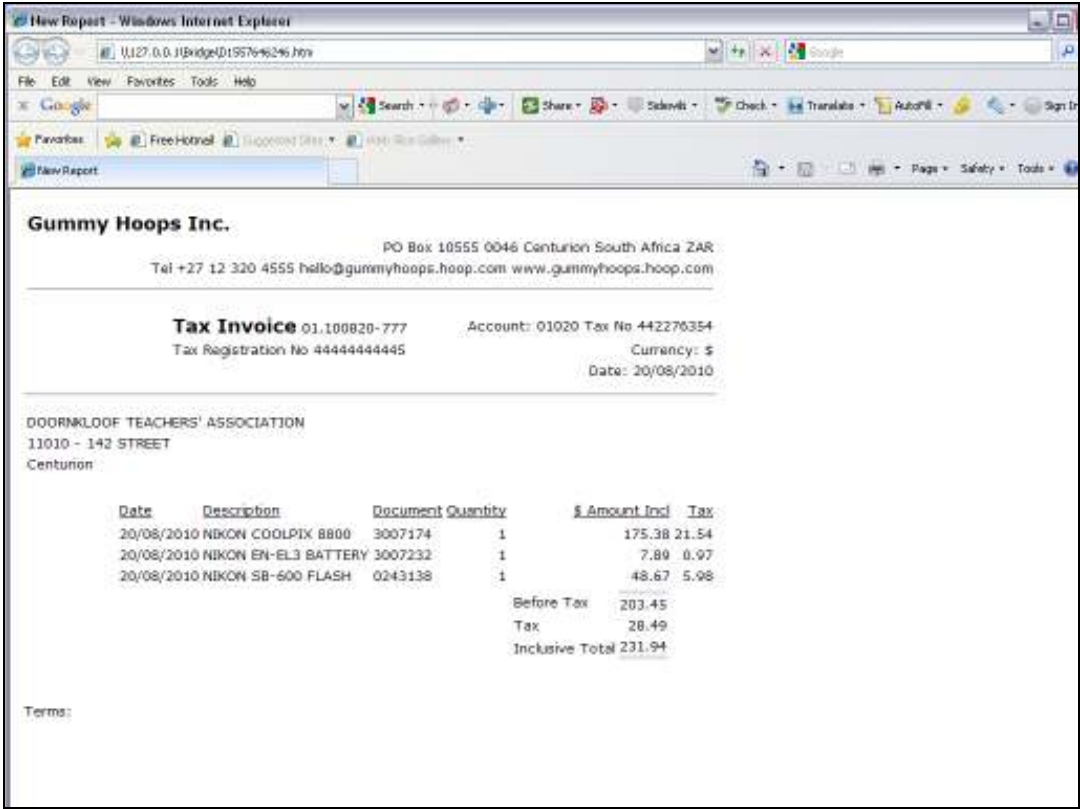


## Slide 1

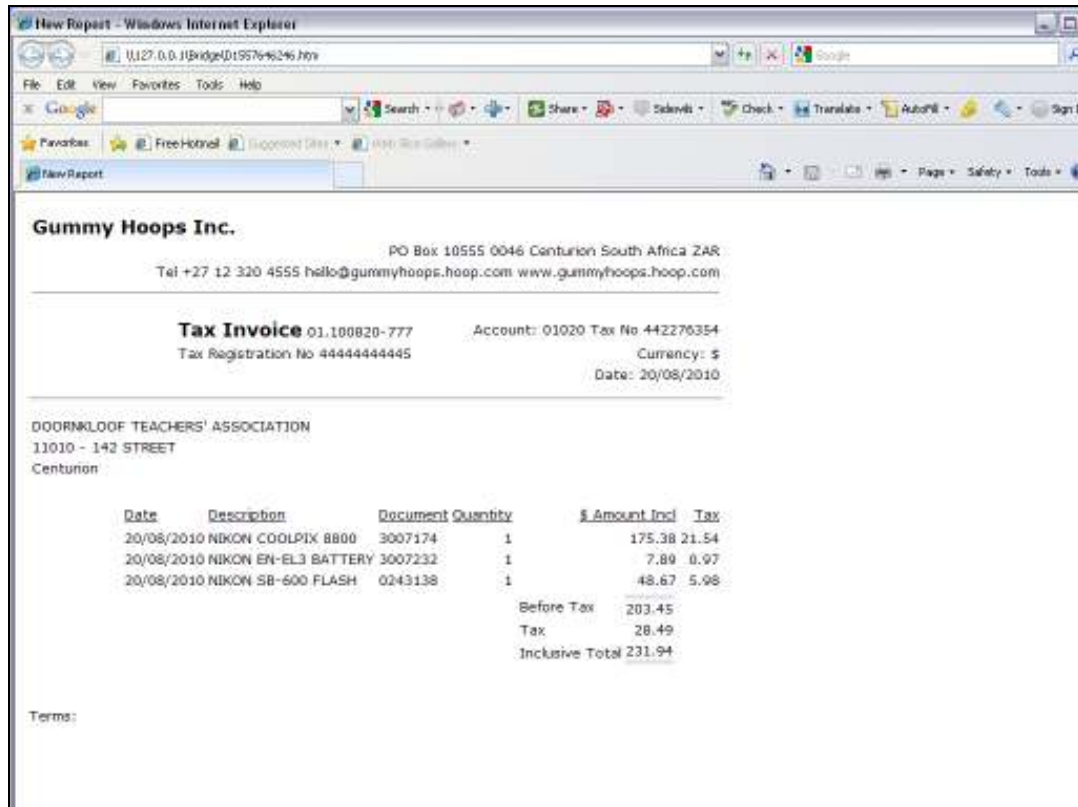
Slide notes: This is an example of an Invoice. On this Invoice, we use a UNIT to display the Line Items on the Invoice, and in the Unit, we use the 'Numeric Iteration' Template for some of the Values.



Slide 2  
Slide notes: The Quantity, Amount & Tax columns all use this kind of Template.



Slide 3  
Slide notes:



Slide 4

Slide notes:



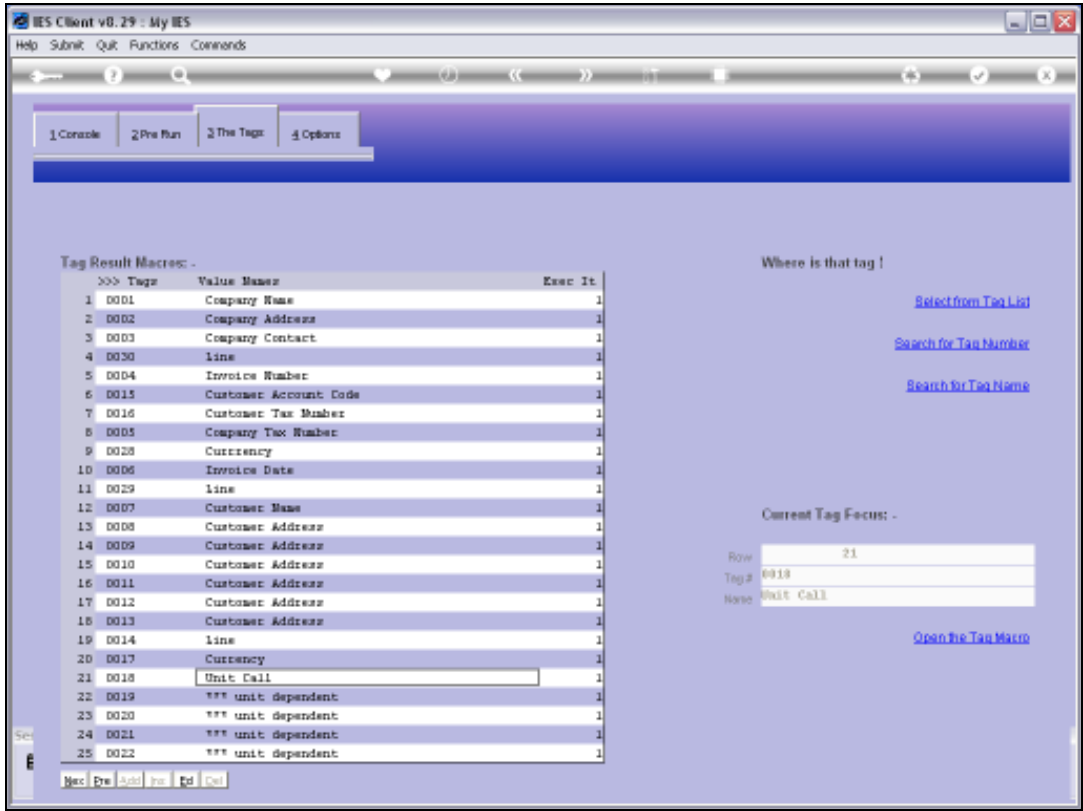
Slide 5

Slide notes: Our example is based on a Retail Invoice Report.

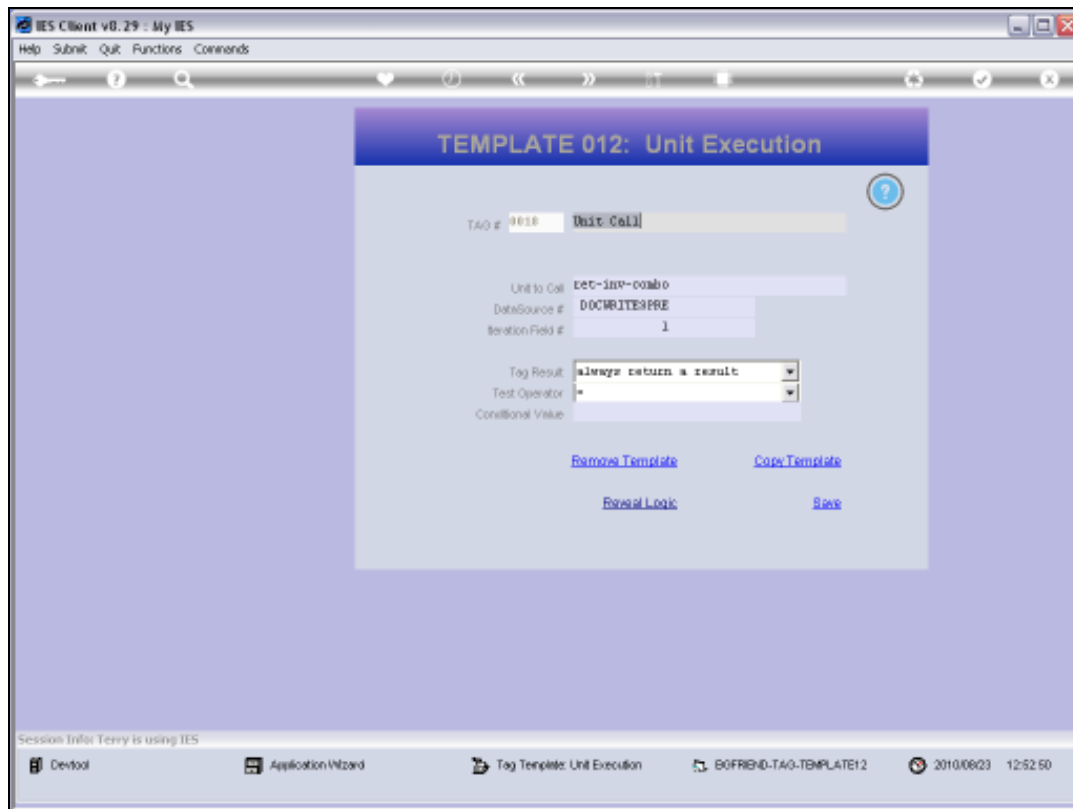


Slide 6

Slide notes:



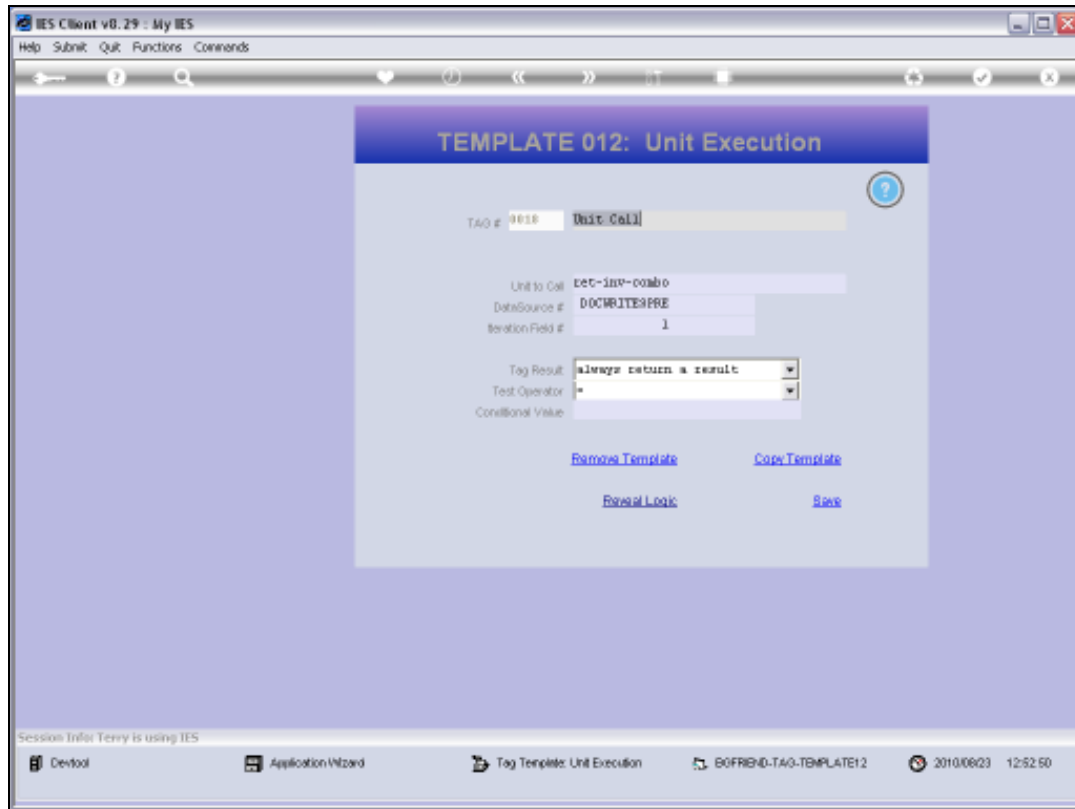
Slide 7  
Slide notes: Here we see the Tag in the main Document that calls the Unit.



Slide 8

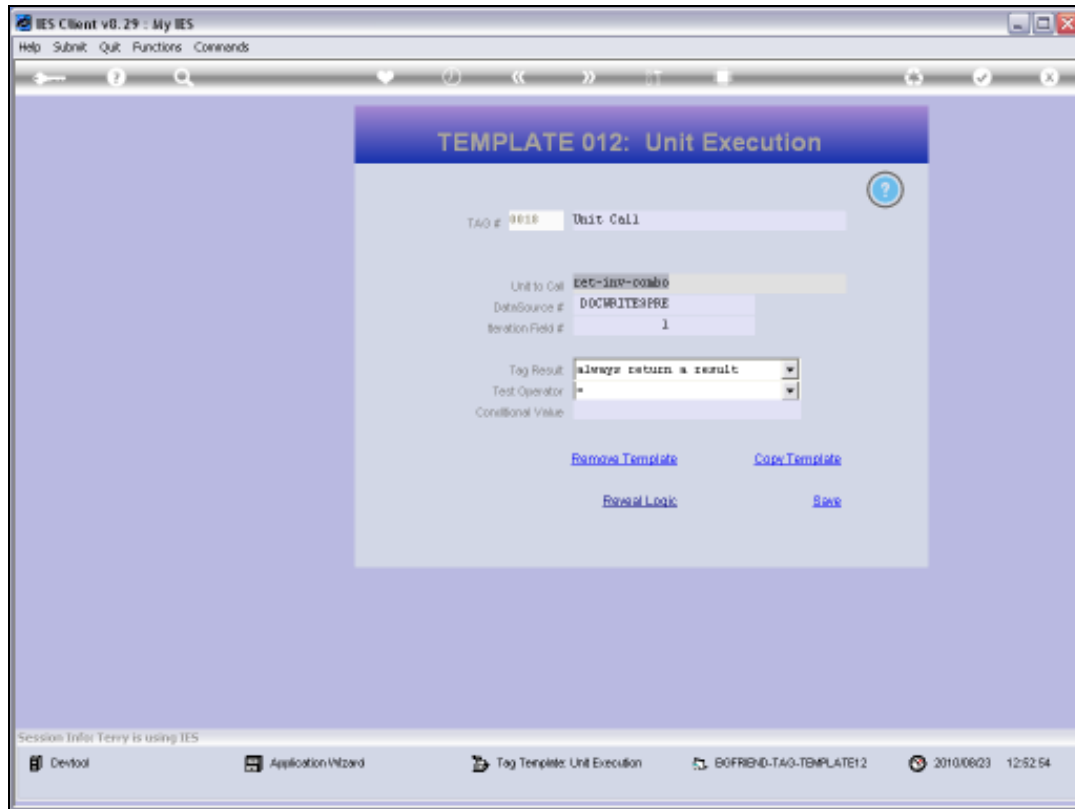
Slide notes:





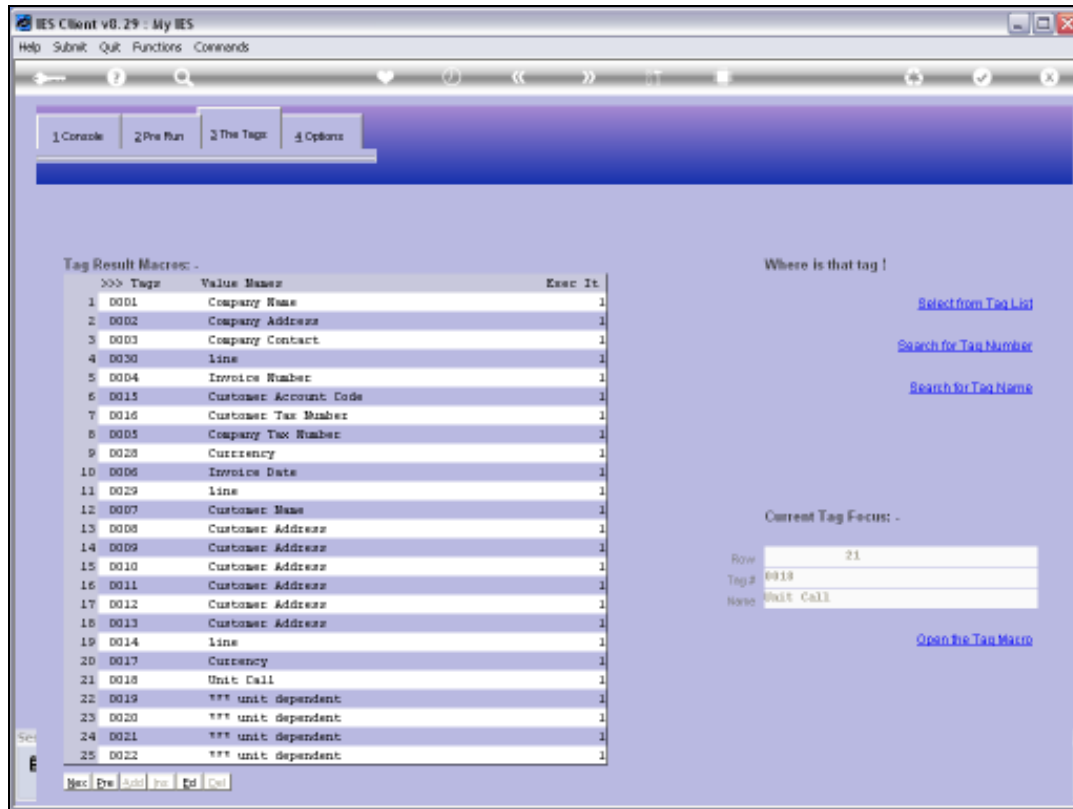
Slide 9

Slide notes:



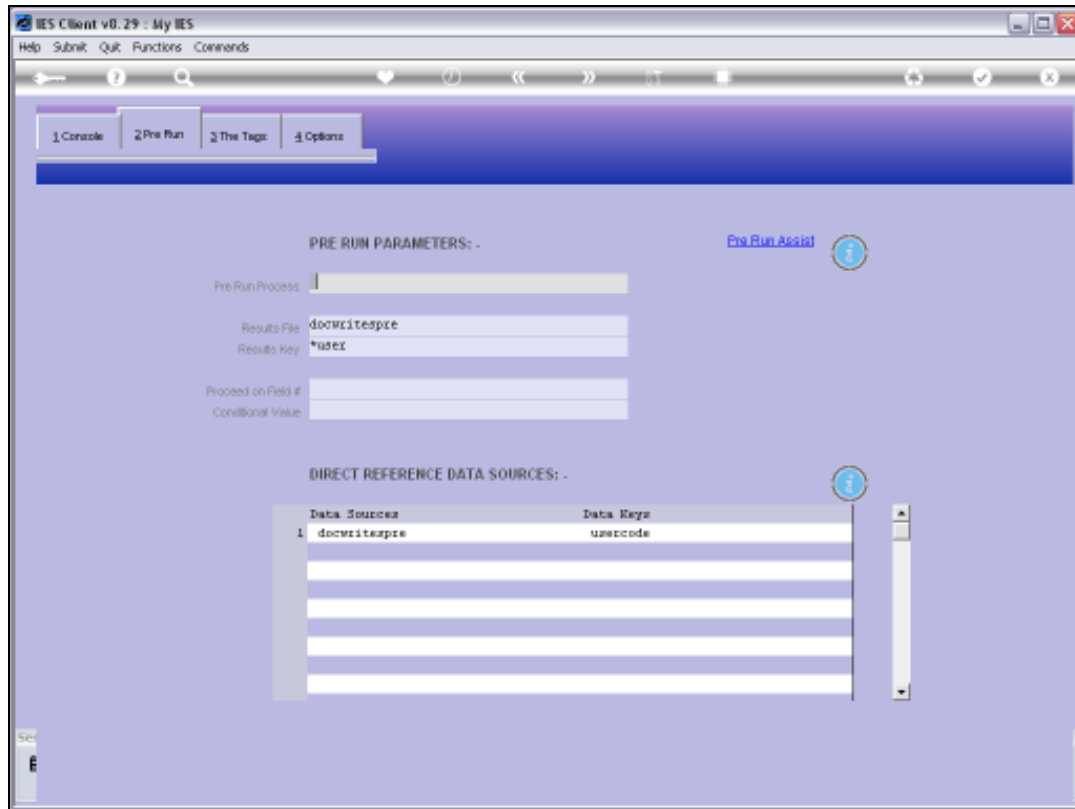
## Slide 10

Slide notes: We note also that this type of Unit Call is based on a Data Source, and for this type of Unit the Data Source is often 'docwritespre', i.e. with a pre-prepared record specifically for the Report.



Slide 11

Slide notes:



Slide 12

Slide notes: Here we can see the Data Source listed.

IES Client v8.29 : My IES

Help Submit Quit Functions Commands

1 Console 2 Pre Run 3 The Tags 4 Options

PRE RUN PARAMETERS:-

[Pre Run Assist](#) ⓘ

Pre Run Process

Results File docwritespri

Results Key \*user

Proceed on Field #

Conditional Value

DIRECT REFERENCE DATA SOURCES:-

| Data Sources   | Data Keys |
|----------------|-----------|
| 1 docwritespri | usercode  |
|                |           |
|                |           |
|                |           |
|                |           |
|                |           |

New Pre Subst Ins Ed Del

Slide 13

Slide notes:



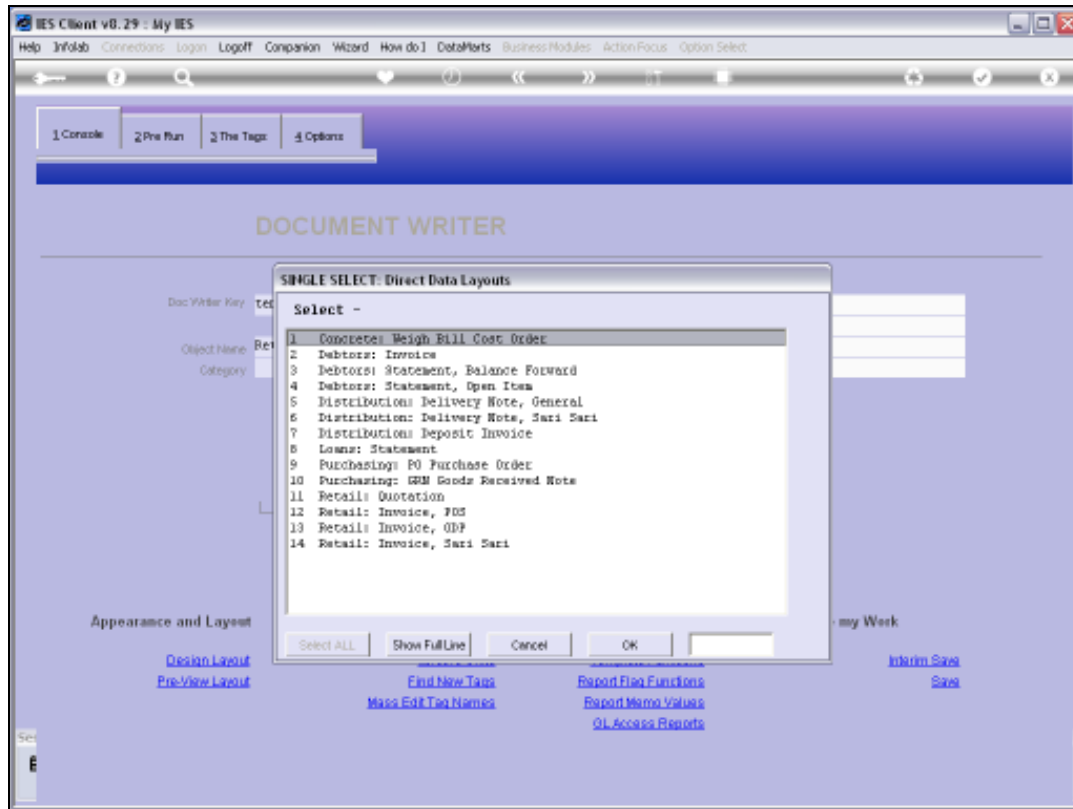
Slide 14

Slide notes:



Slide 15

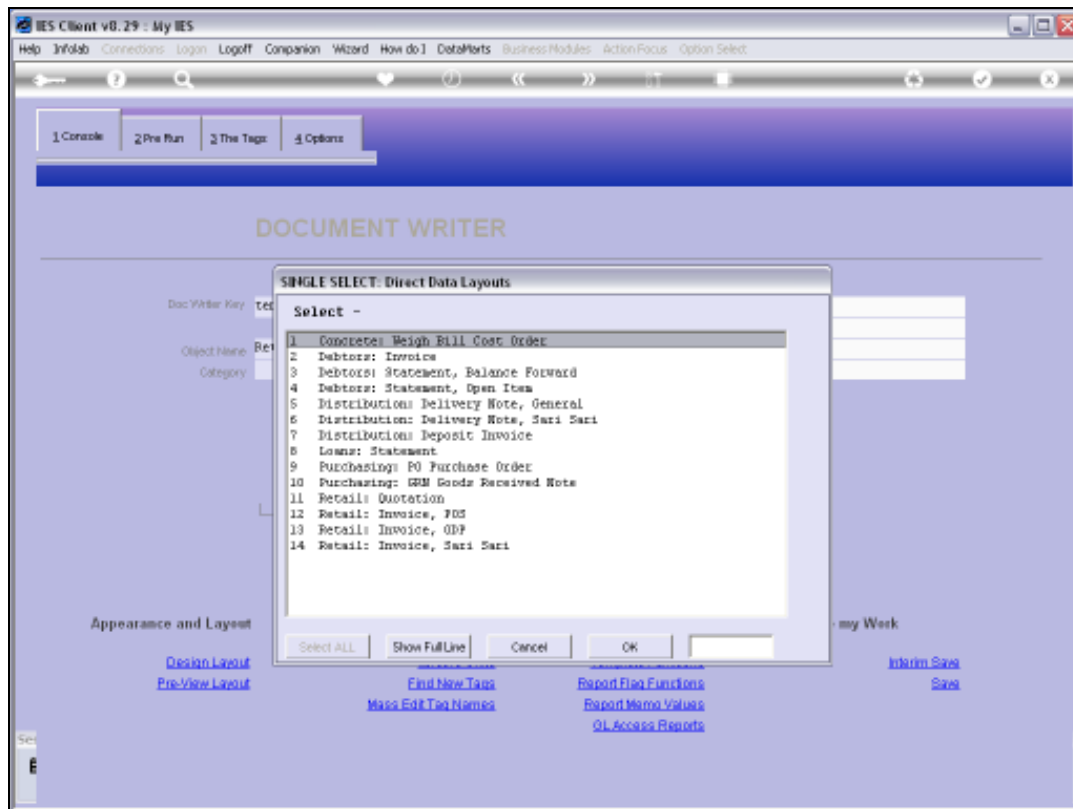
Slide notes:



Slide 16

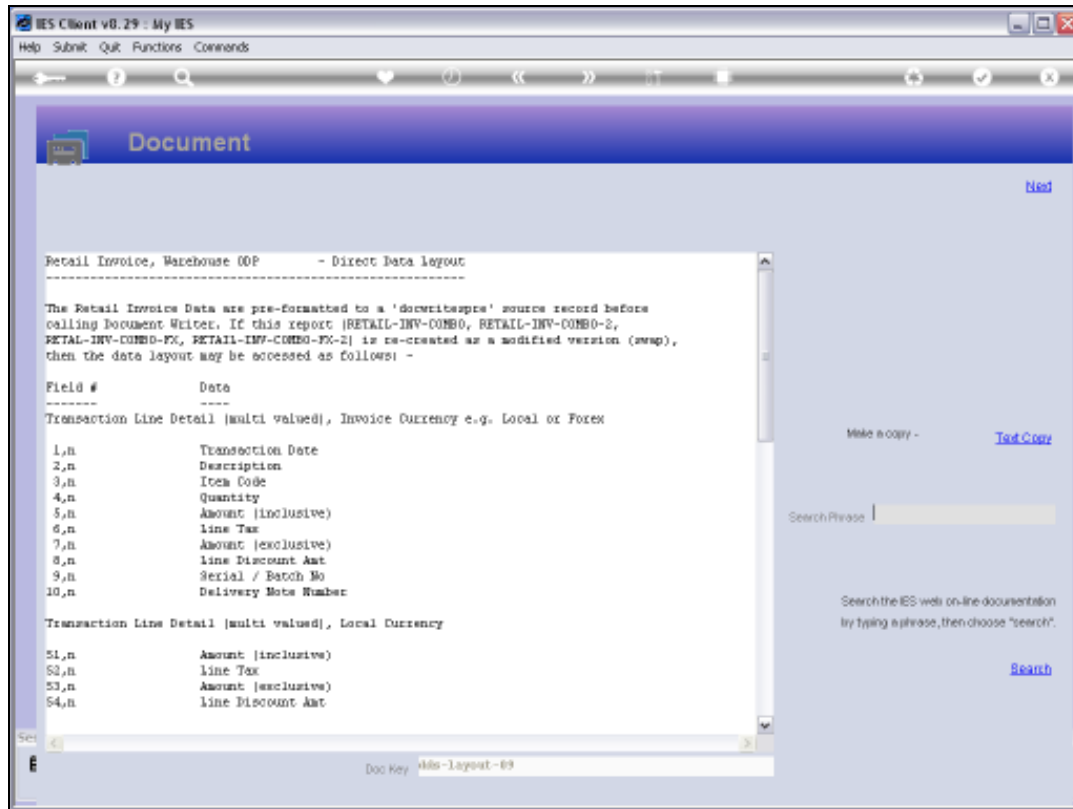
Slide notes:





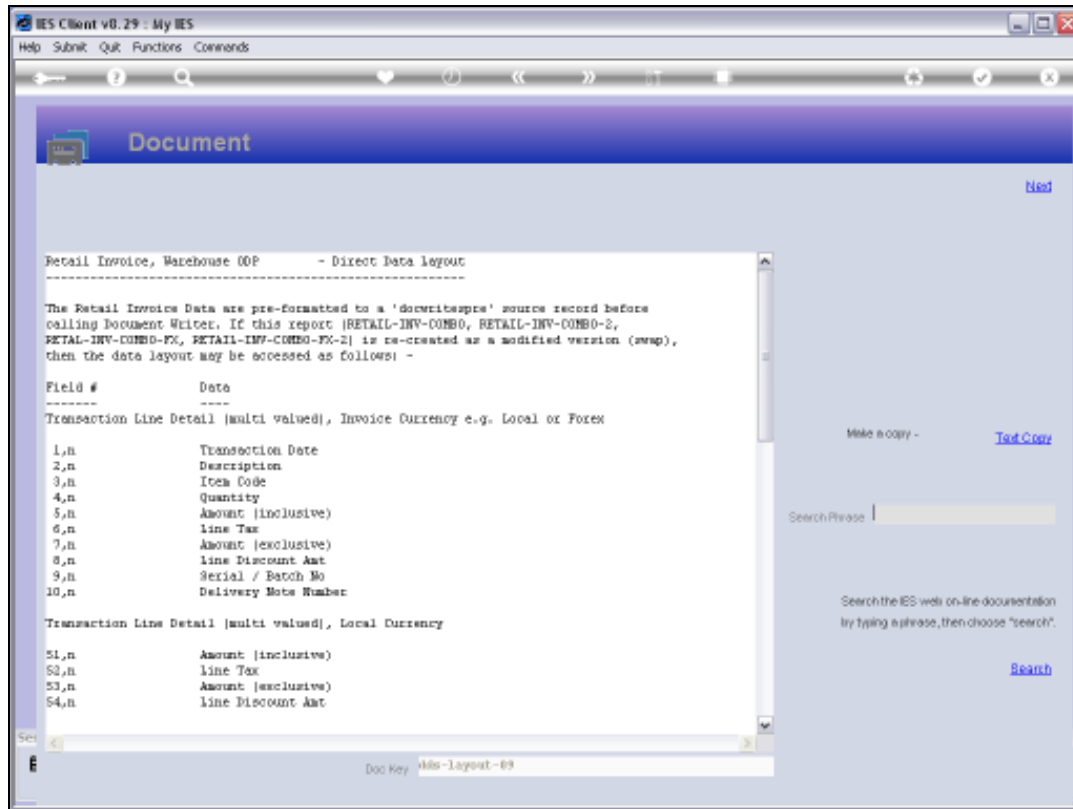
Slide 17

Slide notes: From the Metadata, we can retrieve the Data Source Layout.



Slide 18

Slide notes: We will connect the Tags back to this Layout, to understand where we get the answers from.



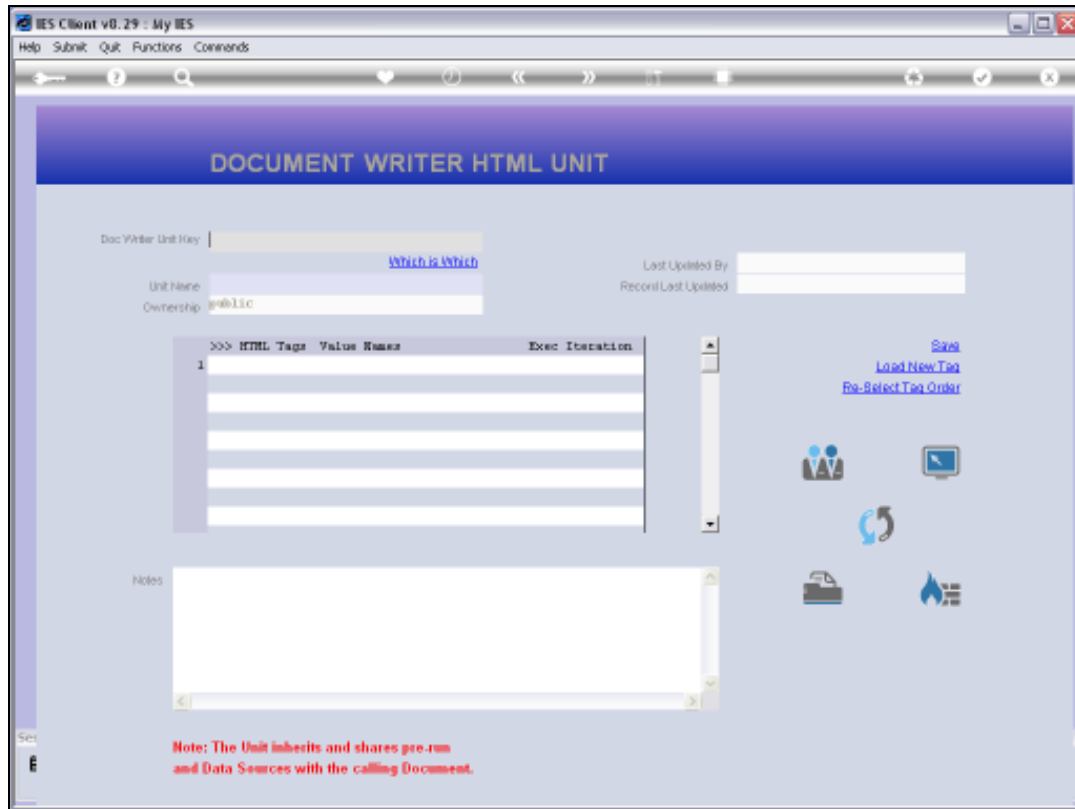
Slide 19

Slide notes:



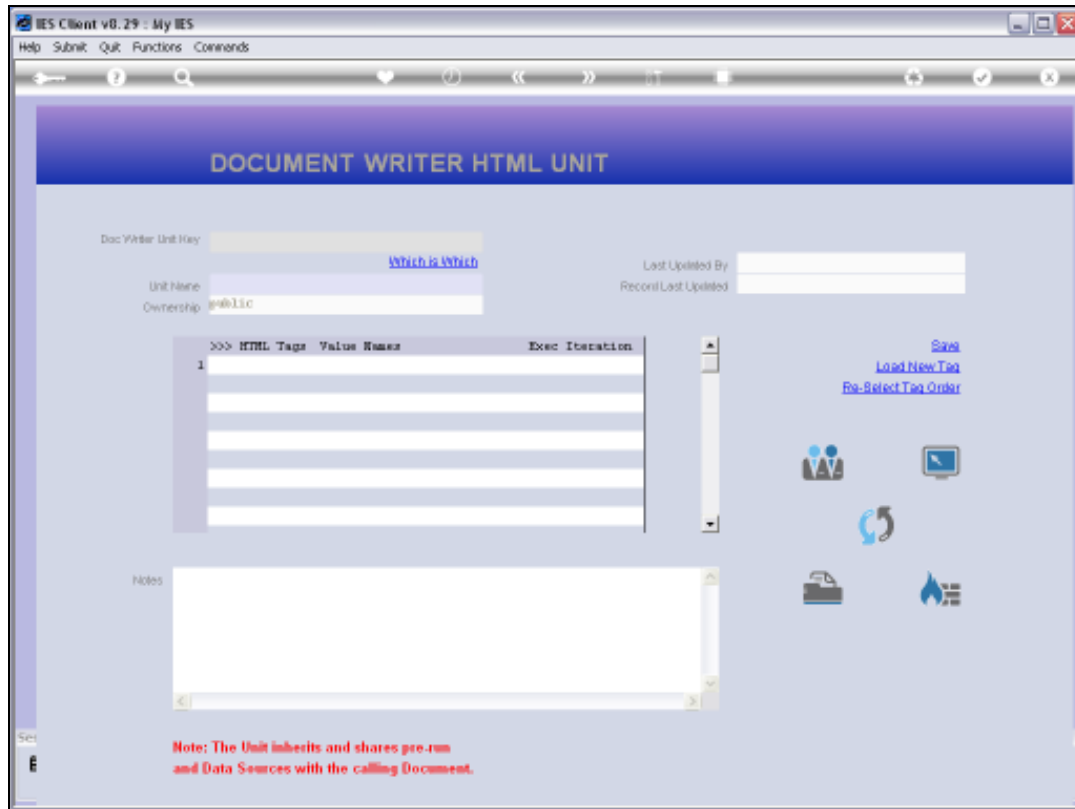
Slide 20

Slide notes:



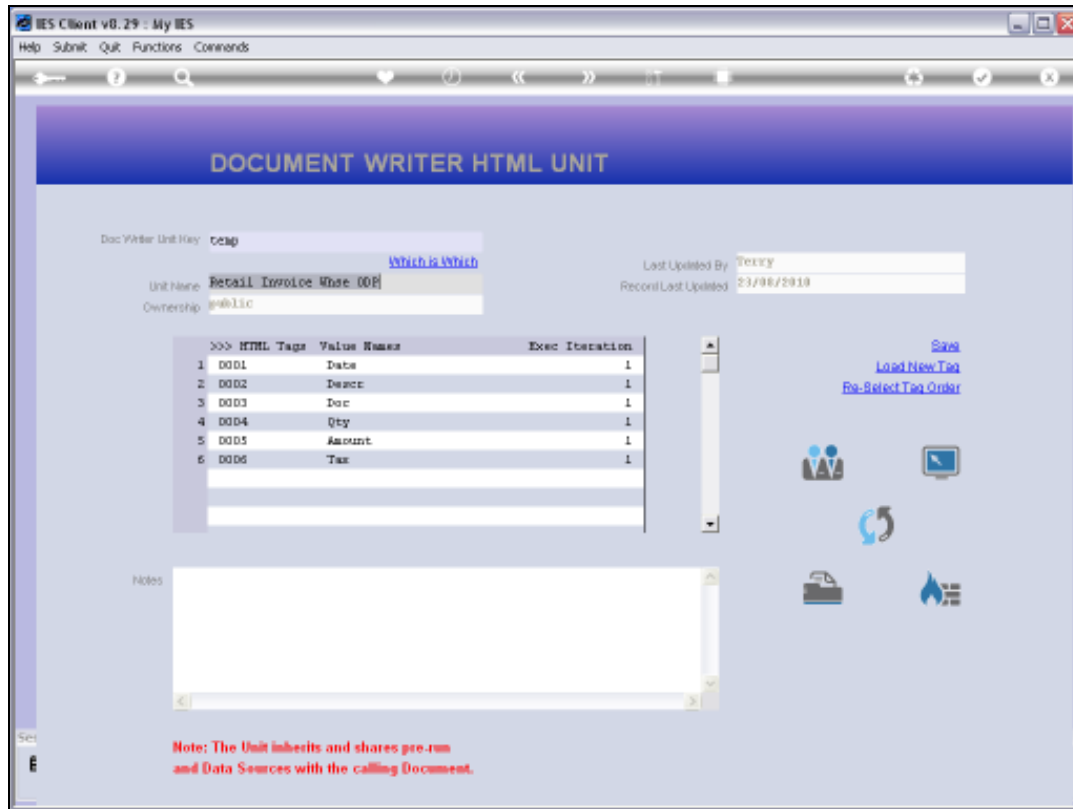
Slide 21

Slide notes:



Slide 22

Slide notes:



## Slide 23

Slide notes: This is our Unit example for this Report. In fact, even the Date column uses the 'Numeric Iteration' Template.

IES Client v8.29 : My IES

Help Submit Quit Functions Commands

← ? 🔍 ♥ 🔄 ⏪ ⏩ 📄

### TEMPLATE 014: Numeric Iteration Value

TAG # 0001

Name **Date**

Data Field # 1

Tag Addressing relative

Financial Scaling 1: no scaling

Rounding for Numbers 1: do not apply rounding

Display Mask d2/

Alignment 1: right justified

Result Width 15

Bold? NORMAL

Underline? NORMAL

Sign Convert? (+/-)

Tag Result ALWAYS RETURN A RESULT

Operator =

Conditional Value

Accurate to VN() working var 61

[Remove Template](#) [Copy Template](#)

[Reveal Logic](#) [Save](#)

Session Info: Terry is using IES

Devtool Application Wizard Tag Template: Numeric Iteration BOFRID-TAG-TEMPLATE14 2010/09/23 12:54:29

## Slide 24

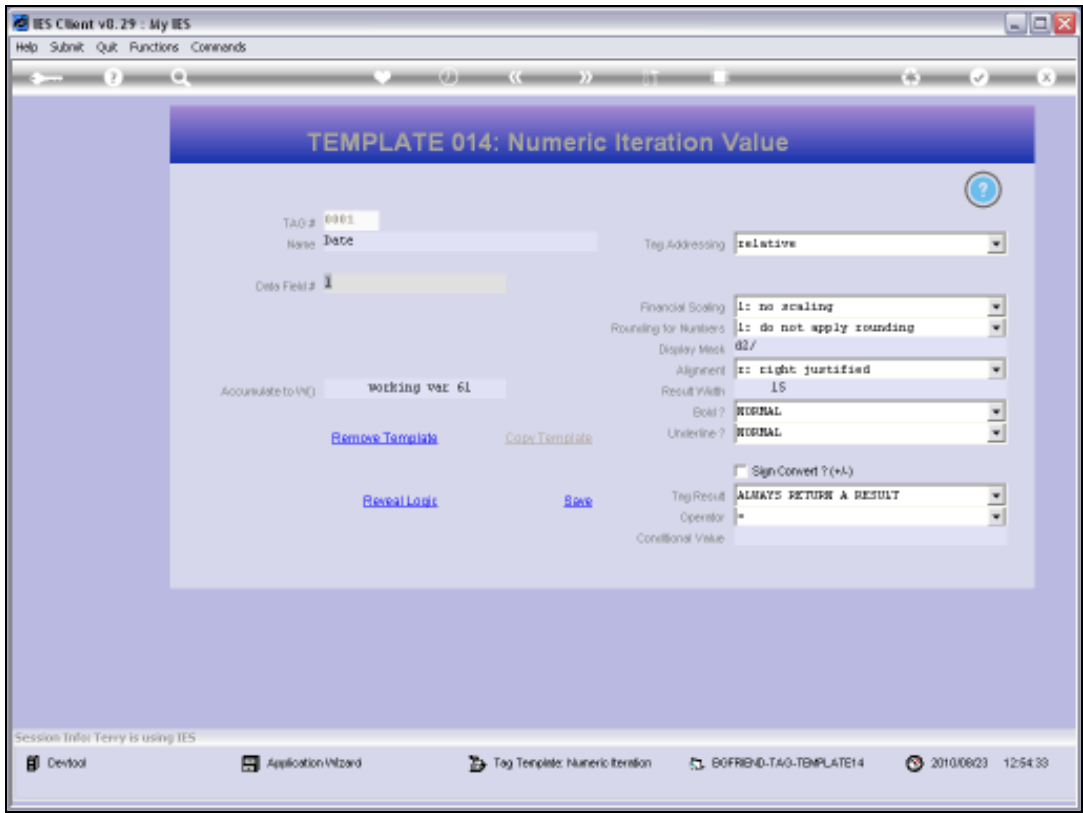
Slide notes: Of course, the Date in this case is available in internal format, i.e. a number, and we can see at the Display Mask field that we use a Display Mask to turn it into a Date presentation.



The screenshot shows the IES Client v8.29 interface. The main window is titled "TEMPLATE 014: Numeric Iteration Value". It contains several configuration fields and buttons. On the left, there is a "TAG # 0001" and a "Name Data" field. Below these is a "Data Field # 1" field. Further down is an "Accumulate to VNC" field with the value "working var 61". At the bottom left are buttons for "Remove Template", "Copy Template", "Reveal Logic", and "Save". On the right side, there are several dropdown menus: "Tag Addressing" set to "relative", "Financial Scaling" set to "1: no scaling", "Rounding for Numbers" set to "1: do not apply rounding", "Display Mask" set to "02/", "Alignment" set to "1: right justified", "Result Width" set to "15", "Bold?" set to "NORMAL", and "Underline?" set to "NORMAL". There is also a checkbox for "Sign Convert (+/-)" which is unchecked. Below these are "Tag Result" set to "ALWAYS RETURN A RESULT", "Operator" set to "=", and "Conditional Value". At the bottom of the window, there is a status bar showing "Session Info: Terry is using IES" and a taskbar with icons for "Devtool", "Application Wizard", "Tag Template: Numeric Iteration", and "BOFRID-TAG-TEMPLATE14". The date and time "2010/09/23 12:54:29" are also displayed.

Slide 25

Slide notes: And the actual Data that is used for the answer is of course an iterative Value from field number 1.



Slide 26  
Slide notes:

```

T1557646546.TXT - Notepad
File Edit Format View Help
Retail Invoice, Warehouse COP - Direct Data Layout
-----
The Retail Invoice Data are pre-formatted to a 'docutilspre' source record before
calling Document Writer. If this report (RETAIL-INV-COMBO, RETAIL-INV-COMBO-2,
RETAIL-INV-COMBO-FX, RETAIL-INV-COMBO-FX-2) is re-created as a modified version (wrap),
then the data layout may be accessed as follows: -

Field #      Data
-----
Transaction Line Detail (multi valued), Invoice Currency e.g. Local or Forex
1,n          Transaction Date
2,n          Description
3,n          Item Code
4,n          Quantity
5,n          Amount (inclusive)
6,n          line Tax
7,n          Amount (exclusive)
8,n          line Discount Amt
9,n          Serial / Batch No
10,n         Delivery Note Number

Transaction Line Detail (multi valued), Local Currency
51,n         Amount (inclusive)
52,n         line Tax
53,n         Amount (exclusive)
54,n         line Discount Amt

Totals in Invoice Currency e.g. Local or Forex
20           Invoice Total excluding Tax
21           Invoice Total Tax
22           Invoice Total including Tax
65           Prepaid Amount or Deposit

Totals in Local Currency
61           Invoice Total excluding Tax
62           Invoice Total Tax
63           Invoice Total including Tax
64           Prepaid Amount or Deposit

Other Indicators
17           Copy (says COPY if it is a copy, else null)

```

Slide 27

Slide notes: And in the Data Layout for the Transaction Lines, we can see that the Date is available from Field number 1.

```

T1557646546.TXT - Notepad
File Edit Format View Help
Retail Invoice, Warehouse COP - Direct Data layout
-----
The Retail Invoice Data are pre-formatted to a 'docutilspre' source record before
calling Document Writer. If this report (RETAIL-INV-COMBO, RETAIL-INV-COMBO-2,
RETAIL-INV-COMBO-FX, RETAIL-INV-COMBO-FX-2) is re-created as a modified version (wrap),
then the data layout may be accessed as follows: -

Field #      Data
-----
Transaction Line Detail (multi valued), Invoice Currency e.g. Local or Forex

1,n          Transaction Date
2,n          Description
3,n          Item Code
4,n          Quantity
5,n          Amount (inclusive)
6,n          line Tax
7,n          Amount (exclusive)
8,n          line Discount Amc
9,n          Serial / Batch No
10,n         Delivery Note Number

Transaction Line Detail (multi valued), Local Currency

51,n         Amount (inclusive)
52,n         line Tax
53,n         Amount (exclusive)
54,n         line Discount Amc

Totals in Invoice Currency e.g. Local or Forex

20           Invoice Total excluding Tax
21           Invoice Total Tax
22           Invoice Total including Tax
65           Prepaid Amount or Deposit

Totals in Local Currency

61           Invoice Total excluding Tax
62           Invoice Total Tax
63           Invoice Total including Tax
64           Prepaid Amount or Deposit

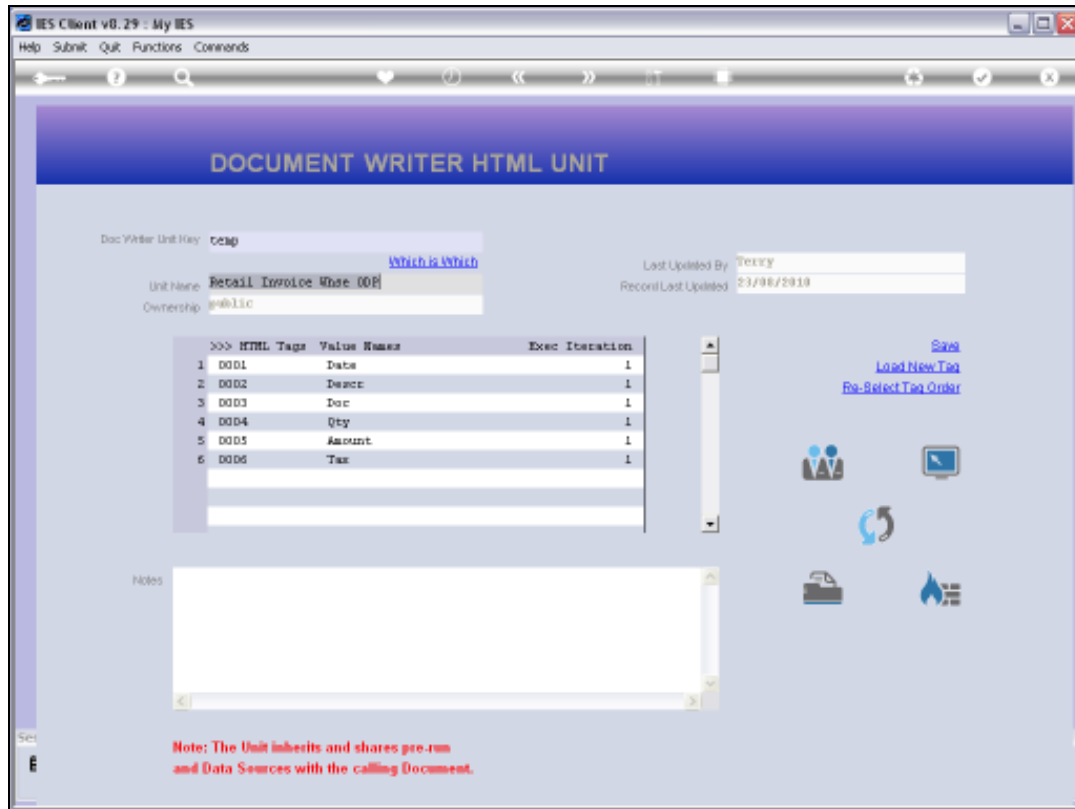
Other Indicators

17           Copy (says COPY if it is a copy, else null)

```

Slide 28

Slide notes:



Slide 29

Slide notes: Let's look at the Amount example.

IES Client v8.29 : My IES

Help Submit Quit Functions Commands

← ? 🔍 ♥ ⌚ ⏪ ⏩ ⌂

### TEMPLATE 014: Numeric Iteration Value

TAQ #

Name

Tag Addressing

Data Field #

Financial Scaling

Rounding for Numbers

Display Mask

Alignment

Result Width

Bold?

Underline?

Accumulate to VNC

[Remove Template](#) [Copy Template](#)

[Reveal Logic](#) [Save](#)

☐ Sign Convert ? (+/-)

Tag Result

Operator

Conditional Value

Session Info: Terry is using IES

Desktop Application Wizard Tag Template: Numeric Iteration BOFRIND-TAQ-TEMPLATE14 2010/08/23 12:57:09

Slide 30

Slide notes:



The screenshot shows the IES Client v8.29 interface. The main window is titled "TEMPLATE 014: Numeric Iteration Value". It contains several input fields and dropdown menus for configuring a tag template. The "TAG # 0000" field is highlighted. The "Name" field is set to "Amount". The "Data Field # 5" field is highlighted. The "Tag Addressing" dropdown is set to "relative". The "Financial Scaling" dropdown is set to "1: no scaling". The "Rounding for Numbers" dropdown is set to "1: do not apply rounding". The "Display Mask" field is set to "M22,". The "Alignment" dropdown is set to "1: right justified". The "Result Width" field is set to "19". The "Bold?" dropdown is set to "NORMAL". The "Underline?" dropdown is set to "NORMAL". The "Sign Convert? (+/-)" checkbox is checked. The "Tag Result" dropdown is set to "ALWAYS RETURN A RESULT". The "Operator" dropdown is set to "+". The "Conditional Value" field is empty. There are buttons for "Remove Template", "Copy Template", "Reveal Logic", and "Save". The status bar at the bottom shows "Session Info: Terry is using IES" and "2010/09/23 12:57:11".

IES Client v8.29 : My IES  
Help Submit Quit Functions Commands

TEMPLATE 014: Numeric Iteration Value

TAG # 0000  
Name Amount  
Data Field # 5  
Tag Addressing relative  
Financial Scaling 1: no scaling  
Rounding for Numbers 1: do not apply rounding  
Display Mask M22,  
Alignment 1: right justified  
Result Width 19  
Bold? NORMAL  
Underline? NORMAL  
Sign Convert? (+/-) ☒  
Tag Result ALWAYS RETURN A RESULT  
Operator +  
Conditional Value

Remove Template Copy Template  
Reveal Logic Save

Session Info: Terry is using IES  
Desktop Application Wizard Tag Template: Numeric Iteration BOFRIND-TAG-TEMPLATE14 2010/09/23 12:57:11

Slide 32

Slide notes: The answer comes from Data Field number 5.



T1557646546.TXT - Notepad

File Edit Format View Help

Retail Invoice, Warehouse COP - Direct Data layout

-----

The Retail Invoice Data are pre-formatted to a 'docutilspre' source record before calling Document Writer. If this report (RETAIL-INV-COMBO, RETAIL-INV-COMBO-2, RETAIL-INV-COMBO-FX, RETAIL-INV-COMBO-FX-2) is re-created as a modified version (wrap), then the data layout may be accessed as follows: -

| Field #  | Data  |
|--|---|
| -----  |   |
| Transaction Line Detail (multi valued), Invoice Currency e.g. Local or Forex |   |
| 1,n  | Transaction Date                            |
| 2,n  | Description                                 |
| 3,n  | Item Code                                   |
| 4,n  | Quantity                                    |
| 5,n  | Amount (inclusive)                          |
| 6,n  | line Tax                                    |
| 7,n  | Amount (exclusive)                          |
| 8,n  | line Discount Amc                           |
| 9,n  | Serial / Batch No                           |
| 10,n   | Delivery Note Number                        |
| Transaction Line Detail (multi valued), Local Currency                       |   |
| 51,n   | Amount (inclusive)                          |
| 52,n   | line Tax                                    |
| 53,n   | Amount (exclusive)                          |
| 54,n   | line Discount Amc                           |
| Totals in Invoice Currency e.g. Local or Forex                               |   |
| 20   | Invoice Total excluding Tax                 |
| 21   | Invoice Total Tax                           |
| 22   | Invoice Total including Tax                 |
| 65   | Prepaid Amount or Deposit                   |
| Totals in Local Currency   |   |
| 61   | Invoice Total excluding Tax                 |
| 62   | Invoice Total Tax                           |
| 63   | Invoice Total including Tax                 |
| 64   | Prepaid Amount or Deposit                   |
| Other Indicators   |   |
| 17   | Copy (says COPY if it is a copy, else null) |

Slide 33

Slide notes: We can see this in the Data Layout also.

| Field #  |  | Data  |
|--|--|---|
| Transaction Line Detail (multi valued), Invoice Currency e.g. Local or Forex |  |   |
| 1,n  |  | Transaction Date                            |
| 2,n  |  | Description                                 |
| 3,n  |  | Item Code                                   |
| 4,n  |  | Quantity                                    |
| 5,n  |  | Amount (inclusive)                          |
| 6,n  |  | line Tax                                    |
| 7,n  |  | Amount (exclusive)                          |
| 8,n  |  | line Discount Amc                           |
| 9,n  |  | Serial / Batch No                           |
| 10,n   |  | Delivery Note Number                        |
| Transaction Line Detail (multi valued), Local Currency                       |  |   |
| 51,n   |  | Amount (inclusive)                          |
| 52,n   |  | line Tax                                    |
| 53,n   |  | Amount (exclusive)                          |
| 54,n   |  | line Discount Amc                           |
| Totals in Invoice Currency e.g. Local or Forex                               |  |   |
| 20   |  | Invoice Total excluding Tax                 |
| 21   |  | Invoice Total Tax                           |
| 22   |  | Invoice Total including Tax                 |
| 65   |  | Prepaid Amount or Deposit                   |
| Totals in Local Currency   |  |   |
| 61   |  | Invoice Total excluding Tax                 |
| 62   |  | Invoice Total Tax                           |
| 63   |  | Invoice Total including Tax                 |
| 64   |  | Prepaid Amount or Deposit                   |
| Other Indicators   |  |   |
| 17   |  | Copy (says COPY if it is a copy, else null) |

Slide 34

Slide notes:

The screenshot shows the IES Client v8.29 interface. The main window is titled "TEMPLATE 014: Numeric Iteration Value". It contains several input fields and dropdown menus for configuring a tag template. The "TAG # 0000" field is highlighted. The "Name" field is "Amount". The "Data Field # 8" is highlighted. The "Tag Addressing" dropdown is set to "relative". The "Financial Scaling" dropdown is set to "1: no scaling". The "Rounding for Numbers" dropdown is set to "1: do not apply rounding". The "Display Mask" field is "M22,". The "Alignment" dropdown is set to "1: right justified". The "Result Width" field is "19". The "Bold?" dropdown is set to "NORMAL". The "Underline?" dropdown is set to "NORMAL". The "Sign Convert? (+/-)" checkbox is checked. The "Tag Result" dropdown is set to "ALWAYS RETURN A RESULT". The "Operator" dropdown is set to "+". The "Conditional Value" field is empty. The "Accumulate to VNC" field is "working var 65". There are buttons for "Remove Template", "Copy Template", "Reveal Logic", and "Save". The status bar at the bottom shows "Session Info: Terry is using IES" and a list of open applications: "Devtool", "Application Wizard", "Tag Template: Numeric Iteration", "BOFRID-TAG-TEMPLATE14", and a clock showing "2010/09/23 12:58:11".

## Slide 35

Slide notes: And with all of these Templates, we accumulate the Iteration Value into an Accumulator, so that if we need a Total for the Column on the Report then we can get it from the Accumulator.

The screenshot shows the IES Client v8.29 interface. The main window is titled "TEMPLATE 014: Numeric Iteration Value". It contains several input fields and dropdown menus for configuring a tag template. The fields are as follows:

- Tag # 0000
- Name Amount
- Tag Addressing relative
- Data Field # 5
- Financial Scaling 1: no scaling
- Rounding for Numbers 1: do not apply rounding
- Display Mask M22,
- Alignment 1: right justified
- Result Width 19
- Bold? NORMAL
- Underline? NORMAL
- Sign Convert? (+/-)
- Tag Result ALWAYS RETURN A RESULT
- Operator \*
- Conditional Value

At the bottom of the window, there is a status bar showing "Session Info: Terry is using IES" and a taskbar with icons for "Devtool", "Application Wizard", "Tag Template: Numeric Iteration", and "BOFRID-TAG-TEMPLATE14". The date and time "2010/09/23 12:58:13" are also displayed.

## Slide 36

Slide notes: This Template is ALWAYS used with a Data Source Record where the Unit is based on an included Data Set where a number of Fields have correlated multi or iterative Values.