Script Entry

Use the DYO rows to implement logic and math operations. The rows will be evaluated in sequence from row A through row L. When more rows are needed to complete a design, simply add more DYO studies to the chart and continue the implementation.

Category

Several hundred DYO statements have been grouped into 12 Categories. The first step to implementing a design is to select a category on a row, which then displays appropriate additional entry fields.

Expression - This category is used to write both Boolean and algebraic expressions by combining data values, Variables and DYO row values.

Function - This category contains 46 mathematical functions such as Sqrt for Square Root.   Appendix – Function

Flag - Look in this category for Boolean logic statements testing complex relationships between values, and operations with other Boolean flags.   Appendix – Flag

Action - This category contains statements for manipulating Variables, complex IF statements, and controlling various actions in the Ensign program.   Appendix – Action

Study - The values and flags from studies that are present on a chart ahead of the DYO on the chart's object list can be read. Select the Study from the Selection drop-down list. Select the particular study's value from the #2 drop-down list. For example, you could select the 'Stochastic' study from the Selection #1 list, and then select the '%D Value' from the Selection #2 list.

Studies that are placed on the chart will report a variety of conditions. These conditions are Boolean flags that can be used in an implementation. An example for the Stochastic study would be the flag for '%D Rising'.

Appendix – Study

Quote Value - This category can be used to read any of the values and flags from the quote page. Leave the Selection field blank to have the row default to the chart's symbol. Enter a Symbol in the Selection field to read values for some other symbol. Since values are obtained in real-time, the values will be for the content presently on the quote page. There is no back history for what the quote page values might have been in the past.

Appendix – Quote Value

Chart Value - This category list statements that deal with values and flags obtained from the chart such as whether a bar's time stamp is in the Globex session.
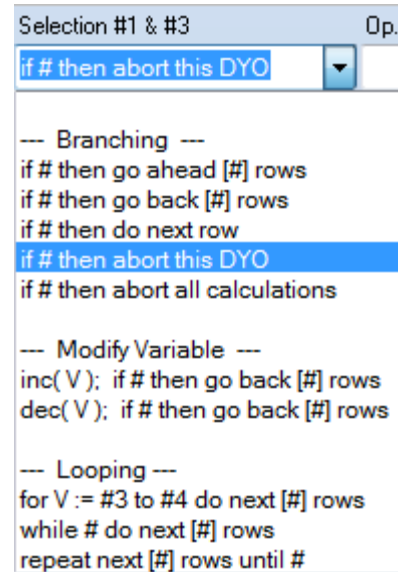
Appendix – Chart Value
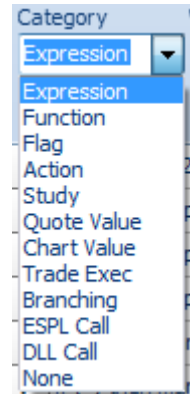
Branching - The statements in this category implement conditional branching of program execution to another DYO row. Multiple rows can be skipped or branching can loop back to an earlier DYO row.

Appendix – Branching

ESPL and DLL Call – The DYO row can execute a function or procedure written in the ESPL language or make an external call to a DLL procedure.
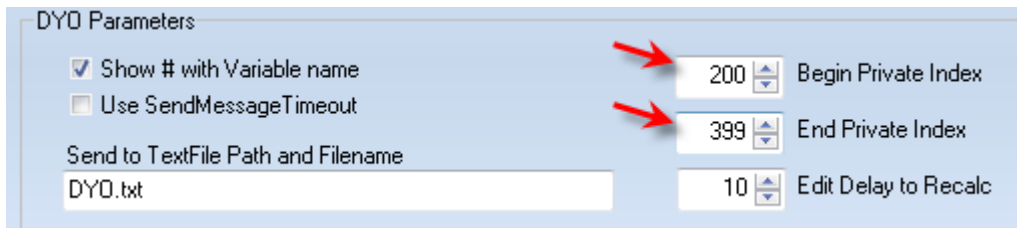
Appendix – ESPL and DLL

None - Use this category selection when a DYO row is not used. This selection hides the selection boxes for the row. When the DYO is evaluated, a row with a None category selection is skipped.   A row that is changed to None will show in the table with a yellow background color. This is like commenting out the line.   The category can be reselected to undo this comment mode.   Use the Erase Row button to erase a row, which also sets the category to the None selection.

Selection #1 & #3	Op.
if # then abort this DYO	▾

--- Branching ---
if # then go ahead [#] rows
if # then go back [#] rows
if # then do next row
if # then abort this DYO
if # then abort all calculations

--- Modify Variable ---
inc(V); if # then go back [#] rows
dec(V); if # then go back [#] rows

--- Looping ---
for V := #3 to #4 do next [#] rows
while # do next [#] rows
repeat next [#] rows until #

Variables

1000 Variables are available to hold values or Boolean flags.   Variables with a public scope can be written and read by studies on other charts. Variables can have a private scope, meaning they can only be written and read by the current chart. The index range to make variables private is set on the Setup | System | ESPL & DYO form. In this example, the variables whose indexes are in the range from 200 to 399 will be private.

DYO Parameters

☑ Show # with Variable name   200 ⬍ Begin Private Index
☐ Use SendMessageTimeout   399 ⬍ End Private Index
Send to TextFile Path and Filename
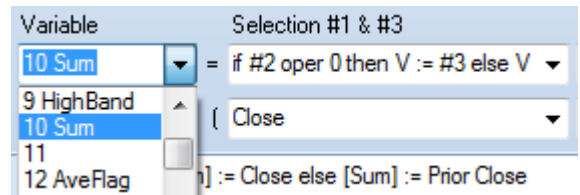DYO.txt   10 ⬍ Edit Delay to Recalc

Variables can be used in expression fields, message and label text by surrounding the variable index with square brackets.   Example: [10] refers to Variable number 10.

Variables can be given names to make the script more readable.   In the Variable edit | box, enter a new name to replace the index number. The text in the Variable edit box will show the index and the new name. But when a variable is used in an expression, the new name will show instead of the index number. Now the variable [Sum] can be used in expressions instead of [10].
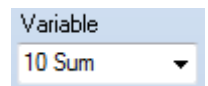
Variable
10 Sum   ▾

Custom variable names can be returned to their index number by erasing the text in the edit box, or by double clicking on the Variable edit box when the variable has been selected.

Example: '10 Sum' shows in the Variable field, and a double click on the field will replace '10 Sum' with its index number, | ie. '10'. In expressions, [Sum] will be replaced with [10].

Variable   Selection #1 & #3
10 Sum ▾ = if #2 oper 0 then V := #3 else V ▾
9 HighBand
10 Sum   [Close   ▾
11
12 AveFlag   ] := Close else [Sum] := Prior Close

Variables File - The names for the Variables are saved in the C:\Ensign10\Variables folder in a file with the name shown in the Variables File list box.   The extension on the filename will be .ini.   The file is ASCII and can be edited using Notepad.

A new file is created by editing the text in the Variables File combo box.   An existing file can be selected from the drop down list, which will change the name assignments for the variables.   If you distribute templates and layouts containing DYOs that have variable names, please create a custom Variables File and distribute your personalized file.   Save your file in C:\Ensign10\Variables folder and then the new filename will show in the combo box list.

Data Fields

Over 190 predefined data fields are available for use in writing expressions. The choices populate a selection drop-down list so it is easy to know what is offered.   A selection such as 'Close' will return a bar's close value.

Lines with '---' are section headers for organizational purposes rather than data fields to be selected.   Do not select these entries. Appendix – Expression
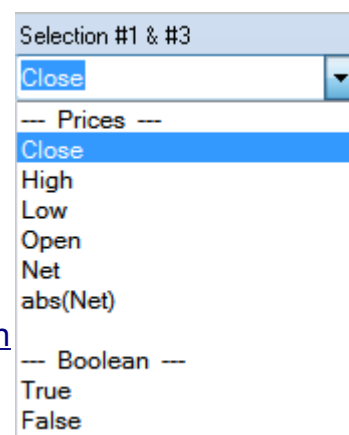
Bar Offset

A Bar Offset can be specified to reference earlier bar data. For example, a Bar Offset value of -1 would read data from the prior bar. A value of -5 would indicate 5 bars back. An offset of zero is the current bar begin evaluated. Example: Close[-1] is the prior bar's close.
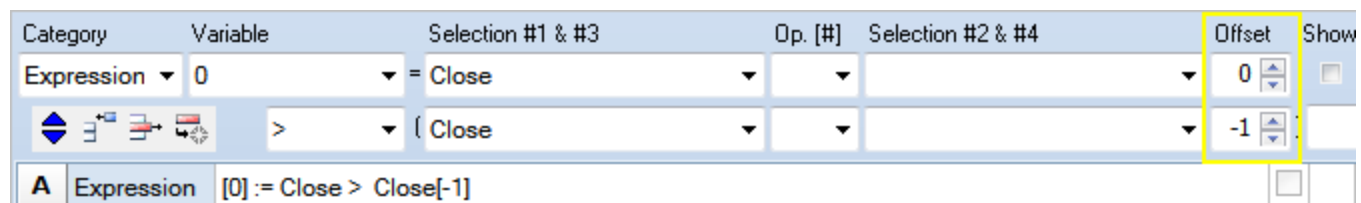
A Variable with an index in the range of 201 to 230 can be the source of the value for the Offset. Enter the Variable's index in the Offset field.

Operators

Use the Op. list box to select mathematical and logic operators.

The '>' operator means 'greater than' and the Boolean flag is a relationship that could be True on several bars in sequence. The 'X>' operator means 'cross above' and the Boolean flag would be True on a single bar as an event.   Appendix – Operators
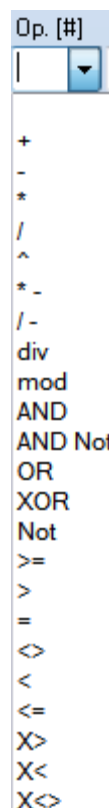
Operator	Meaning	Type
>, >=	Greater than, Greater than or equal to	Relationship
=, <>	Equal to, Not Equal	Relationship
<, <=	Less than, Less than or equal to	Relationship
X>, X<	Cross above, Cross below	Event
X<>	Cross in either direction	Event