PLANTSCAPE SERVER

DISPLAY BUILDING - 1

TABLE OF CONTENTS

SESSION OBJECTIVES

At the completion of this section of the course the student will be able to:

- Utilise the Display Builder to construct a custom graphic background
- Utilise the Display Builder to animate a custom graphic with features including:
    - Status data fields
    - Analog data fields
    - Tank level displays
    - Status Change colour variation
    - Task activating pushbuttons
    - Shape Sequences
    - Dynamic Shapes
    - Animate an object from a Status Point PV using VB Scripting

There are optional Lab Exercises which will enable the student to:

- Create an object with a link to an Internet URL
- Utilise the Popup objects provided with the PlantScape product
- Create a number of Container points and their associated Template Display page

REFERENCES

Knowledge Builder: Display Building Guide

Display Builder Online Help

VB Script Reference

Quick Builder Online Help: Using Container Points

Display Building - Overview

Overview

Display Builder is used to create all the display pages on a PlantScape system.

Display Builder can be used for several tasks:

- to create animated process graphics
- to create Point and Group Detail pages for non-standard Control Modules created in Control Builder
- to customise the standard system pages provided with a PlantScape system.

Guidelines for Creating User-friendly Displays

Before starting to create your process graphics it is worth taking the time to plan how you will present the information in the most effective and consistent way.

Effective presentation will minimise operator confusion based on poor navigation and/or labelling.

Consistent presentation will help to ensure that an operator immediately recognises a data type from its colour, position, or some other unique feature.

Useful information can be found in
Knowledge Builder: Display Builder Guide→Guidelines for Creating User-friendly Displays

Using Display Builder

Information on how to use all the standard facilities within Display Builder can be found in the Online Help by

choosing: **Help→Contents**

or: clicking the  tool at the right end of the Standard toolbar (see next page for location).

Additional notes on some of the more complex features are given in this *Student Guide*.

Using Display Builder

Starting Display Builder

Display Builder can run in Windows'95, or Windows NT 4.0 environments.

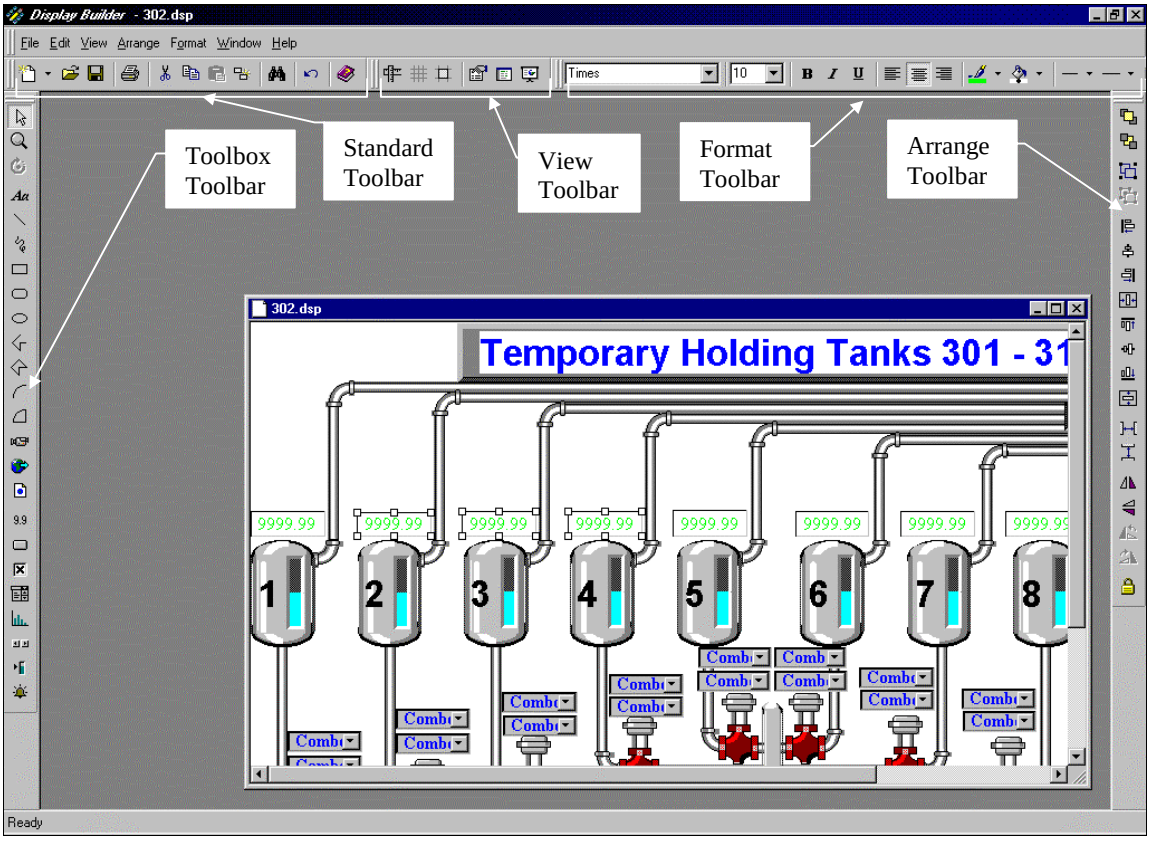
To start Display Builder choose either:

Start→Programs→PlantScape Server→Display Builder

or

Start→Programs→PlantScape Client Software→Display Builder

The Display Builder window consists of a menubar, five toolbars and one (or more) drawing window:



Display Builder window

Changing screen layout

Double clicking on the left (for horizontal) or top (for vertical) of the menubar or a toolbar creates a separate window for that menu/toolbar.

Clicking and dragging on the left (for horizontal) or top (for vertical) of the menubar or a toolbar enables it to be moved to any location on the screen, even outside the Display Builder window.

Display File Administration

Named or Numbered Pages

There are two methods of referencing display pages in a PlantScape system; either by name or a number.

> **Attention**
>
> All new systems should use Named pages.
> Numbered pages are included only for backward compatibility.

Each method has certain distinguishing characteristics:

Named Pages	The name of a page is its filename (the .dsp extension is not required) which should not include spaces, nor consist solely of numeric characters. There is no limit to the number of pages.
Numbered Pages	System Pages occupy page numbers 1 to 300 inclusive. Custom graphics occupy pages number 301 onwards and can be viewed on the Station's **Display Summary**. There is an absolute system capacity of 32767 pages.

Saving a Named Page display file

Once finished the display file can be saved using the standard MS Windows method (click **File→Save As→Save**).
Display Builder will add the extension `.dsp` to the filename.

When a named page display file is saved from Display Builder to the (running) PlantScape Server the Point IDs are checked for correctness.

Saving a Numbered Page display file

When a numbered page display file is saved from Display Builder to the (running) PlantScape Server it's details are automatically "exported" into the Server's database.
This can be verified from a Station by choosing: **System Menu→Displays** and scrolling to the correct page number.

Although not obligatory, it is recommended that numbered pages be saved with their page number embedded in the filename for easy identification; for example, `page301.dsp` or `301.dsp`.

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Display File Administration…..continued

Exporting details of Numbered Pages created in a remote computer

If a numbered page display file is created from Display Builder running in a non-network connected computer (for example a notebook) it must be transferred to the Plantscape Server and then its details must be manually exported into the database.

There are two methods for doing this:

1	Transfer the file on a floppy disk, or some other means, from the computer to the Plantscape Server (into the c:\honeywell\ips\abstract directory). Then open the file in Display Builder and immediately save it, thus exporting its details to the PlantScape Server database.
2	Transfer the file on a floppy disk, or some other means, from the computer to the Plantscape Server (into the c:\honeywell\ips\abstract directory) and then export it into the database using the commands: **`cd  \honeywell\client\dspbld`** **`dspbld –e \honeywell\client\abstract\`*`filename`*`.dsp`** **Attention** 1. **dspbld** must be run from the dspbld directory, and the full pathname for the display file must be given. 2. The display file being used by a Station MUST be identical to the one that was exported to the Server's database otherwise indeterminate results will occur when the page is displayed.

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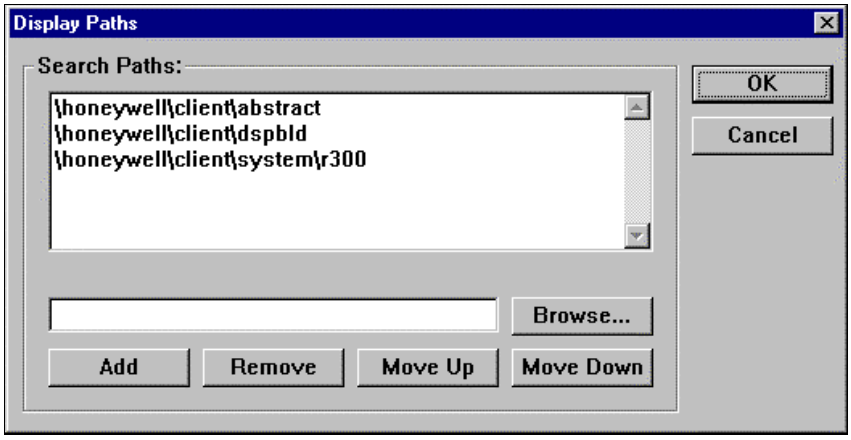
Display File Administration…..continued

Setting up the Station to find the display files

The Station Setup must include search paths to allow Station to find the display file.
The fact that the file is on the Station's, or the Plantscape Server's, hard disk is not sufficient.
If a page is requested from a Station which does not have access to the required file, a message will appear in the Station Message Zone:

```
Cannot find display file nnn.dsp.
```

The search paths are defined from Station by choosing **Station⇒Setup** and clicking **Displays**



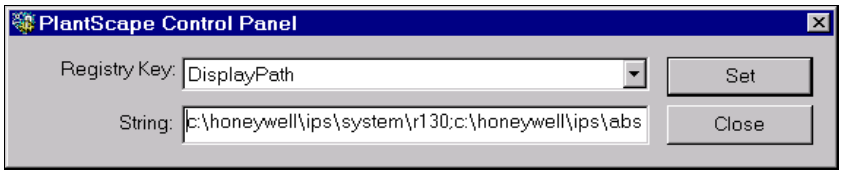
The paths are searched in the order listed.
All sub-directories are also searched.

Setting up the Server to find the display files

The PlantScape Server Control Panel includes display search paths which enable the Server to find display files.

To view the control panel choose:

Start→Programs→PlantScape Server→
PlantScape Server Control Panel



and set the **Registry Key** to DisplayPath.

The default paths are shown above.
Additional paths may be added, separated by a semi-colon (;).
Paths are searched in the order listed, including sub-directories.

To serve, or not to serve

Where are the display files?

All the display files must reside on the PlantScape server.
As an option they may also reside on each Station.

Custom Graphics reside under the following (default) path on the server, and optionally on each Station:

c:\honeywell\client\abstract

System pages (standard and customised) reside under the following path on both the Server and the Stations:

c:\honeywell\client\system\r*nnn*

where nnn is the product release number.

Using the display files from individual Stations

Since the system display files will rarely be modified on a system they are usually stored both on the server and on each Station.

The advantage of doing this is that the time taken to display a new page is kept to a minimum.

The disadvantage is that should a page be modified then the new file must be copied individually to each Station.

Serving the display files

The user can choose whether to store the custom process graphic display files on the PlantScape Server and each Station, or to serve them from the Server.

The advantage of serving the display files is that when a file is modified all Stations immediately have access to the new file.

The disadvantage is that the time taken to display a new page is longer, especially if the file includes embedded bitmaps.

Lab Exercise - Display Building

Introduction

Proceed with the lab exercise listed below. Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Constructing the Display File

This exercise will demonstrate the construction of a Plantscape Server display file at the PSc Server or a remote computer, saving the file, and viewing it on a Station.

Step	Action
1	Start Display Builder by choosing: **Start→Programs→PlantScape Server→Display Builder** or: **Start→Programs→PlantScape Client Software→ Display Builder** Display Builder will start with a blank display file open.
2	Choose: **View→Properties Window** or: Double click on the page background. This displays the **Display Properties** dialogue box. Enter the following data: **Title:** `Team# Exercise` **Numbered page:** unchecked **Page Type:** Standard and close the dialogue box.
3	Display Builder provides a Shape Gallery which contains most of the display elements you will need in order to complete the display on page 14. Choose **View→Shape Gallery** and, in the window, browse to view the shape filenames. Click on the **Preview** button to preview the shapes within each file. **Attention** Ensure that you follow the next instruction exactly. On the Display Builder menubar choose **File→Open** and open the shape file(s) containing the shape object(s) that fits your requirement(s) and copy/paste it(them) into your new display.

continued on next page

Lab Exercise - Display Building…..continued

5	Close the Shape Gallery window and any shape files that you opened. Choose **File→Save As** and, if you are working on the Server, set the directory to: **`c:\honeywell\client\abstract`** or, if you are working on a remote Display Builder, set it to: **`\\server1\honeywel\client\abstract`** In the **File Name** field enter **`team#`** and then choose **Save**.
6	You have now started your display. Create and animate your display according to the specifications given on page 14. As with any work that you conduct at a computer, ensure that you regularly save your display file by choosing **File→Save**.
7	Check your results after each **Save** by connecting your Station to STN2# and viewing your page. Edit any errors from Display Builder, save the changes, and update the page in Station by choosing **View→Reload Page**. Why should you use STN2# rather than STN0# ? Discuss with your Course Manager.

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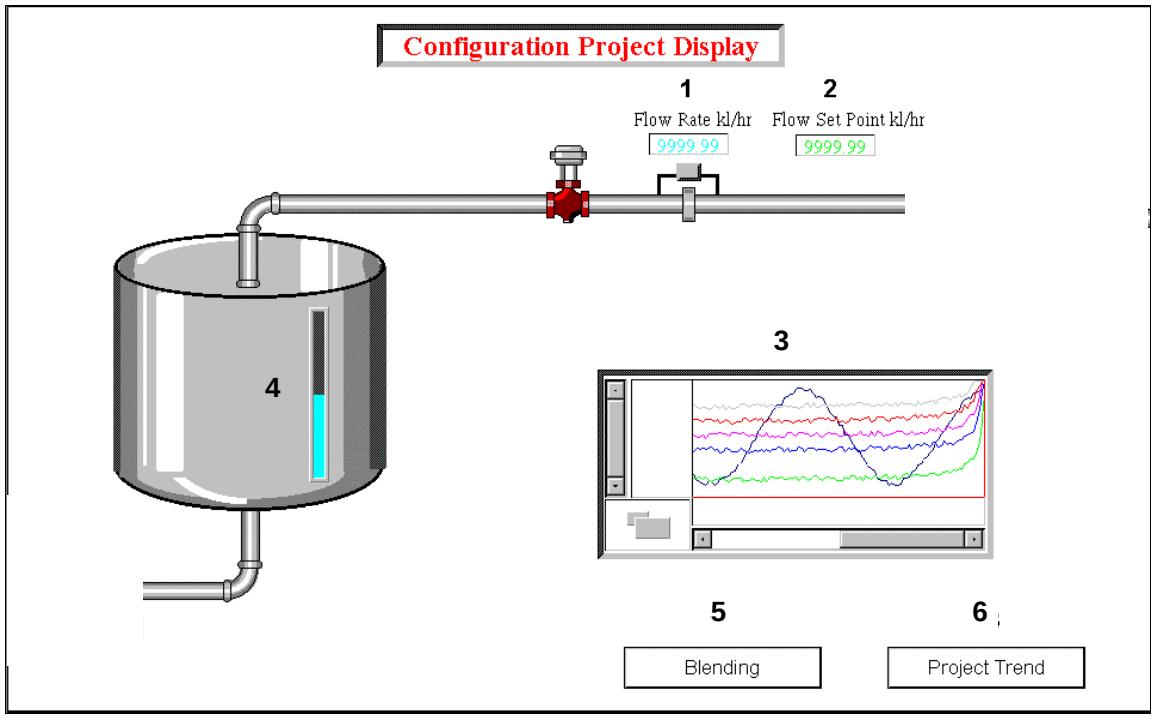
Lab Exercise - Display Building…..continued

Project Display



Animation Specifications

Object No.	Type	Point ID	Parameter
1	Numeric	FT10#	PV
2	Numeric	FT10#	SP
3	Chart (Line Trend, 5 sec snapshpot))	Pen1: FT10#	PV
		Pen2: Sinewave1	PV
4	Level Fill	LT10#	PV
5	Pushbutton	Display Page 301	
6	Pushbutton	Display Trend #1	
	Restrict display of this page to the Area B#.		

Using Shape Files

Three different file types

Display Builder can create three different types of files:

- Display files
- Shape files (or Shape Sequences)
- Dynamic Shape files

All file types have a name of the form *.dsp.

So far during your exercises you have created only a Display file, although you have copied shape objects from shape files.

Creating Shape objects in Display files

Every item which is entered into your display is an “object”.

Some, probably most, of these objects will be graphical representations of plant equipment that are static, that is, they are not monitored and do not change.
Examples are a tank or a length of pipe.

There are two methods for creating such objects.
Each produces identical visual results but different results in terms of file sizes, the number of files involved, and Station Display Paths.

Copying graphical Objects into a Display file

Usually, the best method of placing a graphical object into a Display file is by:

1. Opening the required shape file from Display Builder
2. Copying the required shape (object)
3. Pasting the shape into your display file where it becomes a simple object with no link back to the original shape file.

Attention
This is what you did in the last exercise, refer to Step 3 on page 12.

The advantage of using this method is that all the information for each page is contained within a single Display file.

A possible disadvantage is that future changes to individual Shape files will not be automatically reflected in each page where those shapes have been copied.
Additionally, each copy of a Shape file to a Display file increases the size of that Display file.
Thus the amount of data to be transferred across the network when Display files are being served could potentially be large.

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Using Shape Files…..continued

Inserting a graphical object into a Display file as a Shapelink

An alternative method is to “insert a shapelink”.
This is achieved by:

1. Opening the Shape Gallery
2. Browse to the required directory
3. Use the Preview mode to see the contents of each Shape file
4. Click and Drag the required filename into the destination Display file, or, right click on the required filename and choose **Insert Into Display**.

The disadvantage of using this method is that the Display file does not contain the shape object, only a link to the Shape file.
Thus, when the Display file is viewed in Station it may not be able to access the Shape files if the Display path has not been set up correctly. Either include the Shape Gallery in the Station Display Path, or copy all used Shape files into the c:\honeywell\client\abstract directory.

The advantage of using this method is that if a particular Shape file has been referenced more than once in a single Display file it is only requested by Station once at display time.
This will help to minimise the time taken to display a new page if the Display files are being served from the PlantScape Server.

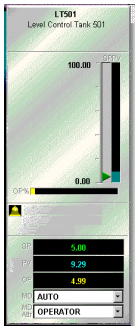
Dynamic Shape Files

Introduction

Dynamic Shapes make it easy to create an object that can include a number of variables and scripts (scripts are discussed later in this section), and then reuse that object as many times as required.
Each time the object is used its variables need to be assigned to specific point/parameter combinations.

Examples of such objects are:

a pump, 

or a PID loop faceplate. 

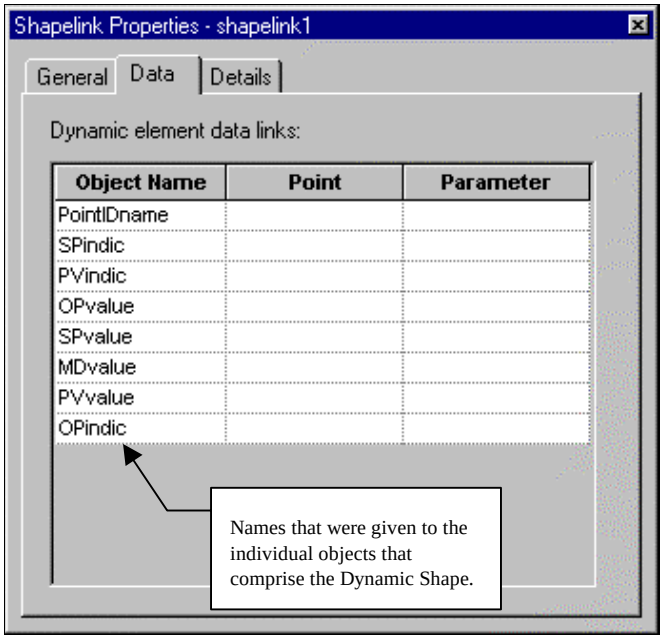
Creating a Dynamic Shape file

Step	Description		
1	To create a new Dynamic Shape file choose **File→New→Dynamic Shape**. Open the **Shape Properties** window and complete the **Title** and **Description** fields.		
2	Using the standard drawing tools create the desired Dynamic Shape. For each dynamic object that is created open the Properties window and set the following data:		
	Tab	**Field**	**Data**
	General	Name	Name by which this object will be referred to when the Dynamic Shape is inserted into a Display file.
	Data	Point	Leave Blank
	Data	Parameter	Leave Blank
3	When the Dynamic Shape has been completed select all the objects and Group them together.		
4	Save the file with an appropriate name.		

continued on next page

Dynamic Shape Files…..continued

Inserting a Dynamic Shape into a Display page

Step	Description
1	With the destination display page in focus, choose **Edit→Insert Shapelink…** select the required shape filename and click **Insert**.
2	The Dynamic Shape will be positioned in the centre of the window. Click and drag it to the desired location and adjust the size if required.
3	Open the **Shapelink Properties** window, click the **Data** tab, and edit the **Point/Parameter** data as required.
	
4	Save the changes to the Display file when complete.

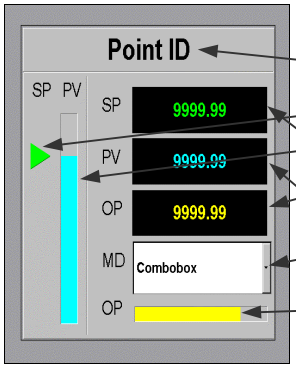
Lab Exercise – Using Dynamic Shapes

Introduction

Proceed with the lab exercise listed below. Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Adding a Dynamic Shape

This exercise will demonstrate how to create a Dynamic Shape and insert it into a Display file.

Step	Action
1	Ensure Display Builder is running with your Display file, Team#.dsp, open.
2	Choose **File→New→Dynamic Shape** and create a Dynamic Shape based on the following example:  Save the file on the Server as **`...\abstract\faceplate#.dsp`** **Attention** Don't forget to group all the objects before your final **Save**.
3	With Team#.dsp in focus, choose **Edit→Insert Shapelink…**, select faceplate.dsp and click **Insert**. Move the shape close to the tank, open the **Shapelink Properties** window and enter the appropriate data to display parameters for point LT10#.
4	View page Team# in Station and edit any errors as required.

Object Name	Object Type
PointIDname	Alphanumeric
SPindic	Indicator
PVindic	Indicator
OPvalue	Alphanumeric
SPvalue	Alphanumeric
MDvalue	Alphanumeric
PVvalue	Alphanumeric
OPindic	Indicator

Shape Sequences

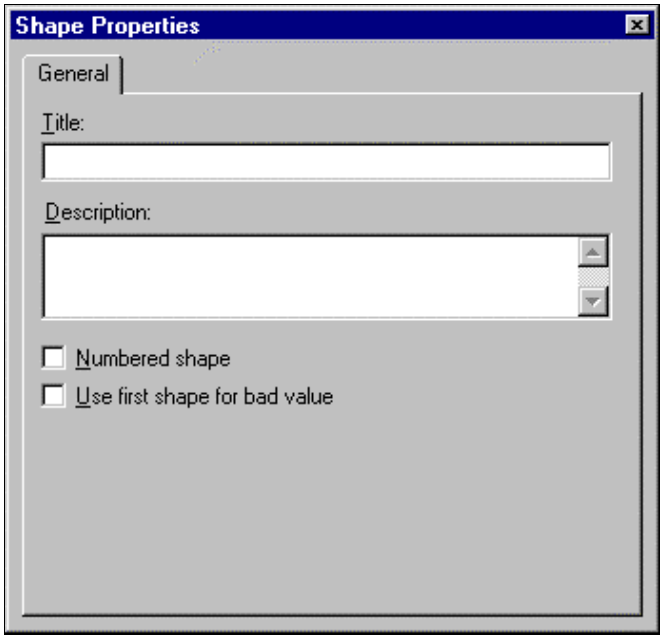
Introduction

It may be necessary to animate an object using a shape sequence so that a different shape (which might only be a colour change) can be used to represent different parameter values.
A single shape sequence can be used to animate a number of different Points.

Creating a new Shape File

To create a new shape file choose **File→New→Shape Sequence**

Double click on the new Shape Sequence window and complete the following details:



Leave **Numbered shape** unchecked unless specifically required.
(Only required for backward compatibility.)

Creating a Shape Sequence

Using the standard drawing tools create a sequence of the required shapes working from left to right on the Display Builder window.

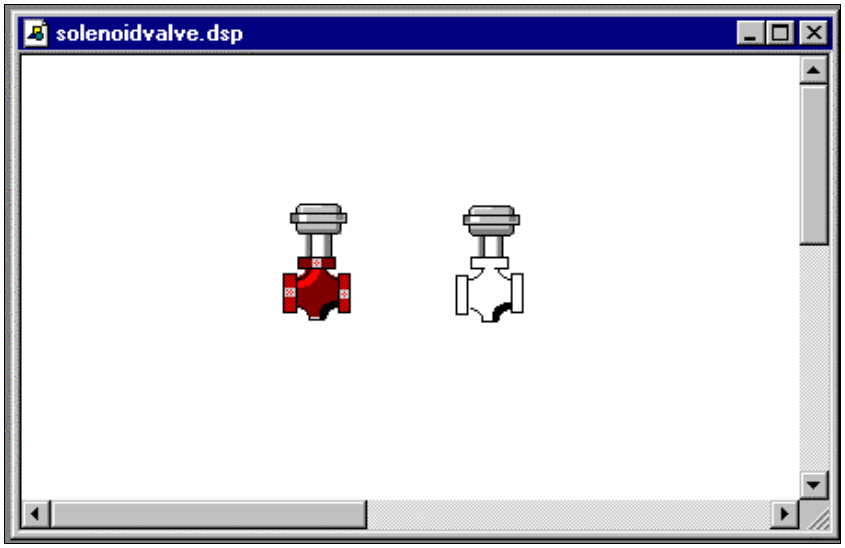
The vertical positioning of each shape has no relevance.

Save the Shape file with an appropriate file name.

continued on next page

Using Shape Sequences…..continued

Shape Sequence Used with Status Points…



Working from the left;

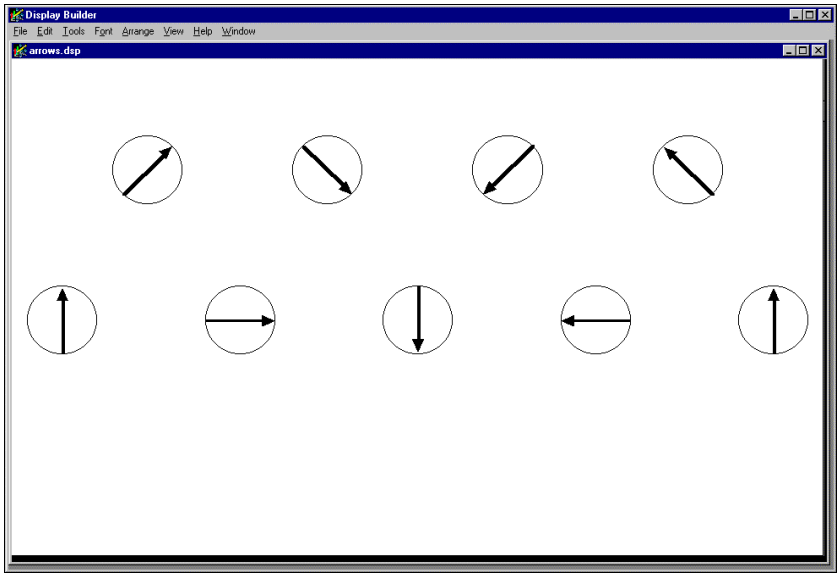
the 1st shape will represent State 0,
the 2nd shape will represent State 1,
and so on for more states.

Note that not every shape in the file has to be used each time the file is used in a shape link.

continued on next page

Using Shape Sequences…..continued

Shape Sequence Used with Analog Points…



This example creates an arrow which points in a direction (0 to 360 degrees) determined by the value of an analog PV (0% to 100%).
The circle could be set to "pg" Line and Fill colours so that it is invisible.
Remember that each circle and arrow pair must be Grouped to form single objects.

Working from the left the first and last shapes will each represent,
Range/(2 x (*n*-1)) Engineering Units

and each intermediate shape will represent,
Range/(*n*-1) Engineering Units

where Range = the animated point's Range,
and n = the total number of shapes to be used.

Thus, in the above example, where there are 9 shapes in total;
the 1st shape represents 0 to 22.5 degrees,
the 2nd shape represents 22.5 to 67.5 degrees,
and so on until….
the 9th shape represents 337.5 to 360 degrees.

Inserting a Shape Sequence into a display page

With the destination display page in focus, choose
Edit→Insert Shapelink…
select the required shape filename and click **Insert**.

The first shape from the selected sequence will appear in the centre of the window.

Click and drag it to the desired location and adjust the size if required.

Double click on the shape and edit its properties as required.

Close the properties dialog box when complete.

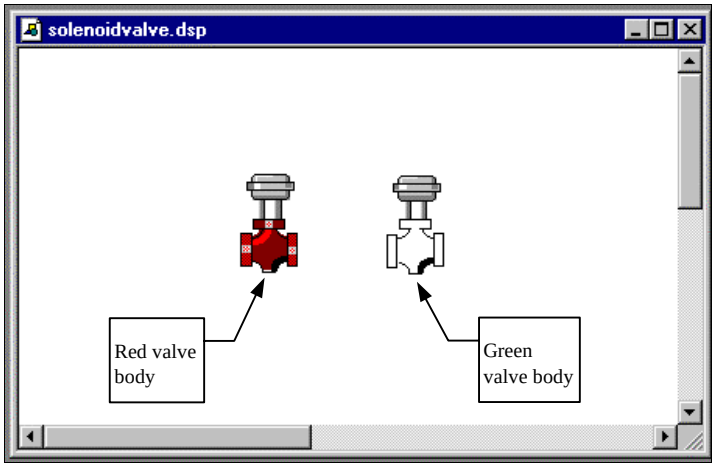
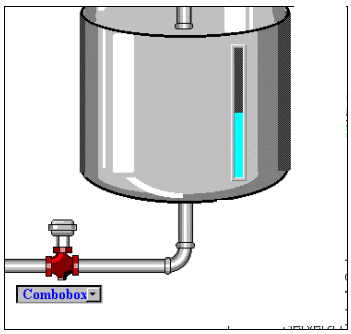
Lab Exercise – Using Shape Sequences

Introduction

Proceed with the lab exercise listed below.
Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Adding a Shape Sequence

This exercise will demonstrate how to create a Shape Sequence and insert it into a Display file.

Step	Action
1	Ensure Display Builder is running with your Display file, Team#.dsp, open.
2	Choose **File→New→ Shape Sequence** and create a Shape Sequence based on the following example:  Save the file as **`valve#.dsp`** Where will you save the file? Discuss with your Course Manager.
3	With Team#.dsp in focus, choose **Edit→Insert Shapelink…**, select valve#.dsp and click **Insert**. Position the valve as shown here…  Open the **Shapelink Properties** window and enter the appropriate data to display VLV110# / PV. Add a combobox and assign it to VLV110# / OP.
4	View page Team# in Station and edit any errors as required.

Display Scripting

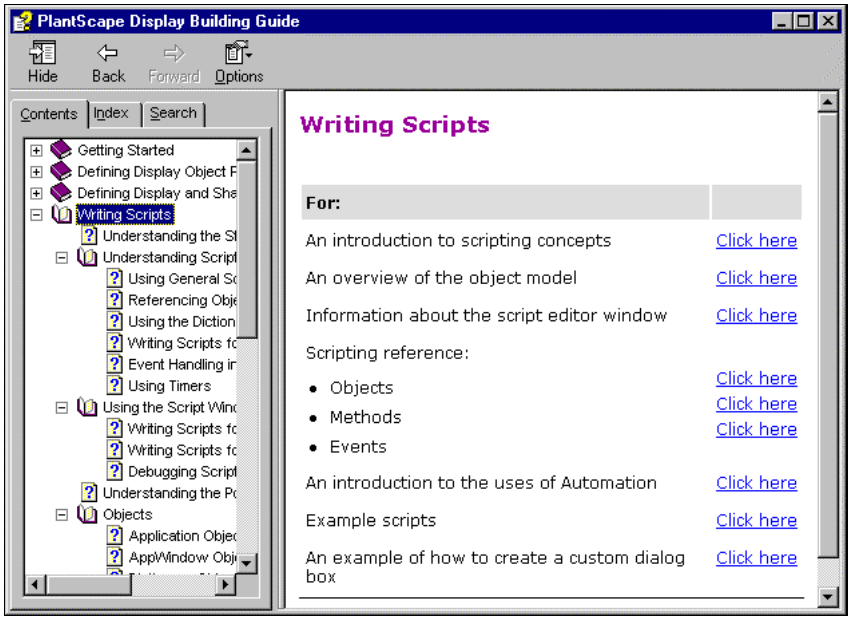
Introduction

VB (Visual Basic) Scripts provide an additional level of flexibility for PlantScape displays.
The following concepts will assist in your understanding of Scripts…

Object	All of the items in a display page are known as Objects. These can include lines, rectangles, pipes, and values. If a number of Objects are Grouped then that Group is also an Object.
Property	Each Object is defined by its Properties. These Properties can include its name, line and fill colours, size, position, visibility, and so on.
Method	Methods are equivalent to the terms “function” or “command”. Scripts are simply one, or a number, of Methods that, when activated, perform the desired function(s). For example, the Page object has a Redraw method which redraws the current page being displayed by Station.
Event	Each object has a number of Events associated with it. Scripts are associated with Events and are activated when that Event occurs. Events include OnClick, OnMouseEnter, OnMouseLeave, OnLoad, and so on.

Further Reading

Further information on VB Scripts can be found in Display Builder by choosing **Help→VBScript Reference** or in the Online Help under **Writing Scripts**.



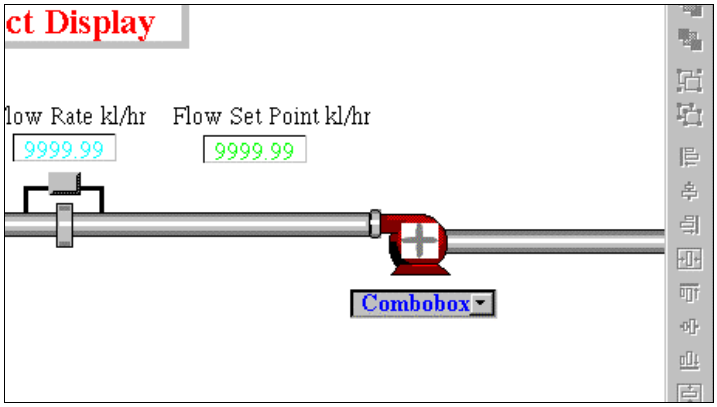
Lab Exercise - Display Building with VB Scripting

Introduction

Proceed with the lab exercise listed below.
Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Adding animation with VB Scripting

This exercise will demonstrate the animation of an object using VB Scripting within the display file.

Step	Action
1	Ensure Display Builder is running with your Display file, Team#.dsp, open.
2	From the Shape Gallery insert a new shapelink, choosing the shapefile fans256.dsp from your \abstract directory, and position it as shown here... **Note** The shape file fans256.dsp has been created for you. You might like to open it to view its contents.  Name this object **`pmp120#shp`** Add a combobox beneath this object and assign it to PMP120# / OP.
3	Add an alphanumeric object near the pump, open the Object Properties and: • Define the **Object Name** as **`pmp120#pv`** • Link this object to PMP120# / PV • In the **Details** tab choose to **Display As** Numeric with 0 Decimals, 1 character

continued on next page

Lab Exercise - Display Building with VB Scripting…..continued

Adding animation with VB Scripting

…..continued

4	Choose **View→Script Window**
	
	Choose the Event OnUpdate and enter the following program code:
	`Sub pmp120#pv_OnUpdate(  )`
	`if value=1 then`
	`  x=createtimer(1,1000)`
	`else`
	`  x=killtimer(1)`
	`  pmp120#shp.value = 1`
	`end if`
	`End Sub`

5	Choose the Event OnTimer and enter the following program code:
	`Sub pmp120#pv_OnTimer(  lTimerID )`
	`'Increment the value of the fan to`
	`'change the shape displayed.`
	`pmp120#shp.value=pmp120#shp.value+1`
	`'The value automatically rolls over`
	`'when the value reaches the`
	`'number stored in the shape file.`
	`'In this case we don't want to`
	`'display the first shape because it is`
	`'the stop position.`
	`if pmp120#shp.value = 1 then`
	`  pmp120#shp.value = 2`
	`end if`
	`End Sub`

6	Close the Script Editor window and choose **File→Save**.

continued on next page

Lab Exercise - Display Building with VB Scripting…..continued

7	Display your page in Station and check for correct animation by commanding PMP120#.OP to RUN and STOP. **Attention** Be prepared to Stop the script from running in case it has an error.
8	When you have confirmed that the animation is correct open the Properties of object pmp120#pv and make it invisible. Save the change. Display the script for object pmp120#pv and change the timer interval from 1000mS to 200mS (see step 4 above). Save the change. Go to Station and redisplay the page to view the final animation.

Lab Exercise - Display Building with SafeBrowse

Introduction

Proceed with the lab exercise listed below.
Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Creating an object with a link to an Internet URL

This exercise will demonstrate the creation of an object with a link to an Internet URL.

Station will only be able to display this page if it has access to that URL provided within its setup file.

<table>
<tr><th>Step</th><th colspan="3">Action</th></tr>
<tr><td>1</td><td colspan="3">Ensure Display Builder is running with your Display file, Team#.dsp, open.</td></tr>
<tr><td>2</td><td colspan="3">Add a new pushbutton object and double click on it to enter the following properties:</td></tr>
<tr><td></td><td>Tab</td><td>Field</td><td>Data</td></tr>
<tr><td></td><td rowspan="3">Details</td><td>Label</td><td><tt>PlantScape Homepage</tt></td></tr>
<tr><td></td><td>Action</td><td>Callup Page</td></tr>
<tr><td></td><td>Page</td><td><tt>http://www.iac.honeywell.com/plantscape</tt></td></tr>
<tr><td>3</td><td colspan="3">Close the property dialogue box and choose File→Save</td></tr>
<tr><td>4</td><td colspan="3">Display your page in Station, click PlantScape Homepage and note the message in the message zone.</td></tr>
<tr><td>5</td><td colspan="3">To enable SafeBrowse access to this URL choose:
Station→Setup and click Navigation</td></tr>
<tr><td>6</td><td colspan="3">Choose Restricted and insert the URL:
<tt>http://www.iac.honeywell.com/plantscape/*</tt>
to allow access to the PlantScape Home page and any of its sub-pages (but excluding links to other sites).</td></tr>
<tr><td>7</td><td colspan="3">Redisplay the page Project in Station, click PlantScape Homepage and check that the Honeywell IAC PlantScape Homepage is displayed in the Station display region.</td></tr>
</table>

Lab Exercise - Display Building with SafeBrowse…..continued

Introduction

Proceed with the lab exercise listed below.
Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Creating an object with a link to a file

This exercise will demonstrate the creation of an object with a file.

<table>
<tr><th>Step</th><th colspan="3">Action</th></tr>
<tr><td>1</td><td colspan="3">Ensure Display Builder is running with your Display file, Team#.dsp, open.</td></tr>
<tr><td>2</td><td colspan="3">Add a new pushbutton object and double click on it to enter the following properties:
<table>
<tr><th>Tab</th><th>Field</th><th>Data</th></tr>
<tr><td rowspan="3">Details</td><td>Label</td><td>Server1 Hosts File</td></tr>
<tr><td>Action</td><td>Callup Page</td></tr>
<tr><td>Page</td><td>File://\\server1\admin$\
system32\drivers\etc\hosts</td></tr>
</table></td></tr>
<tr><td>3</td><td colspan="3">Close the property dialogue box and choose File→Save</td></tr>
<tr><td>4</td><td colspan="3">Display your page in Station, click Server1 Hosts File and check that the Hosts file from Server1 is displayed in the Station display region.

Attention

Access to it is not restricted by the Navigation settings in the Station Setup file.

Are there any restrictions on the access to this file?</td></tr>
</table>

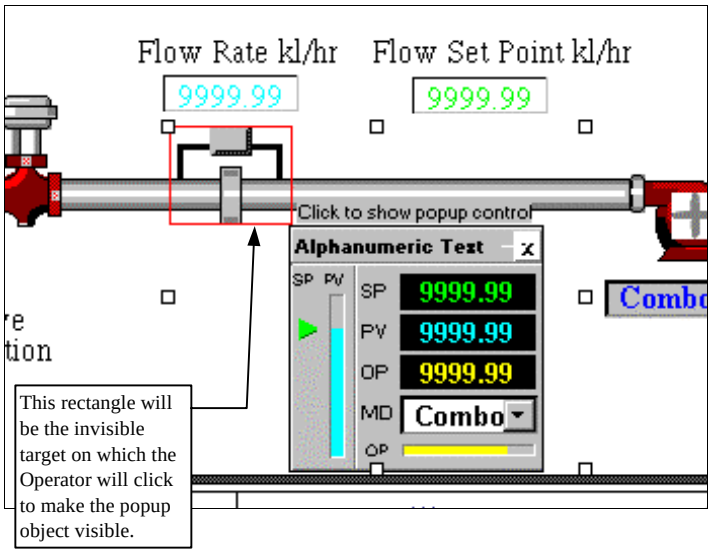
Lab Exercise – Using the Popup Shapes

Introduction

Proceed with the lab exercise listed below. Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Using Popup shapes in a display page

This exercise will demonstrate the use of the Popup shapes provided with the PlantScape product.

Step	Action
1	Ensure Display Builder is running with your Display file, Team#.dsp, open.
2	Choose **Edit→Insert Shapelink…**and select \\server1\honeywel\client\dspbld\shape gallery \Industrial\Popup_Controls\analogpopup.dsp and click **Insert**. and position the object as shown here… 
3	Open the **Shapelink Properties** window and enter the appropriate data to display parameters for point FT10#.
4	Copy the popup shape file to the Server's \abstract directory or, ensure that the PlantScape Server Display path includes the location of the popup shape file (ask your Course Manger about this).
5	View page Team# in Station, click on the flow meter, and check for correct operation of the popup object edit any errors as required.
6	Repeat the above procedure using the shape file statuspopup.dsp, positioning it over the tank outlet valve (VLV110#) and the tank inlet pump (PMP120#). You might find it useful to delete the existing comboboxes assigned to the OP of these points.

Using Container Points and Template Displays

Introduction

There are instances in some types of plants where a particular equipment configuration is repeated many times.
Examples could include:

- Vessels in a batch processing plant,
- Offshore drilling platforms.

Using the Display Builder tools we have learned up to this point the custom display page for such a set of equipment would have to be created individually for each set.
Even though the static components would be common to each display page, and could be copied and pasted, all the point/parameter references of each update point would have to be edited individually.
This could be a time consuming exercise.

Enter the Template Display and Container Points.

A Container Point would be created for each set of equipment and would list the real, or "contained" points, within that equipment.
The resulting Container Point data is displayed using a Template Display page, just like a conventional point's Detail page.

The time taken to configure a set of Container Points and their associated Template Display file would normally be significantly less that created individual Display pages.

A system that includes a number of examples of repeated equipment sets could have a number of Template Display / Container Point type pairs configured.

Not a "normal" point

Container points only exist to speed up the process of display building. They do not perform "normal" point functions like alarming, nor can they use algorithms.

Further Reading

More information is contained within the Quick Builder Online Help.

Configuration Procedure

Step	Description
1	Create the Template Display page and, at the same time, plan the content of the associated Container Point. This is an important step since modifying the structure of a set of Container Points at a later date would be a time consuming process.
2	Create a Container Point template.in Quick Builder.
3	Duplicate the template Container Point to create the number of required Container Points.

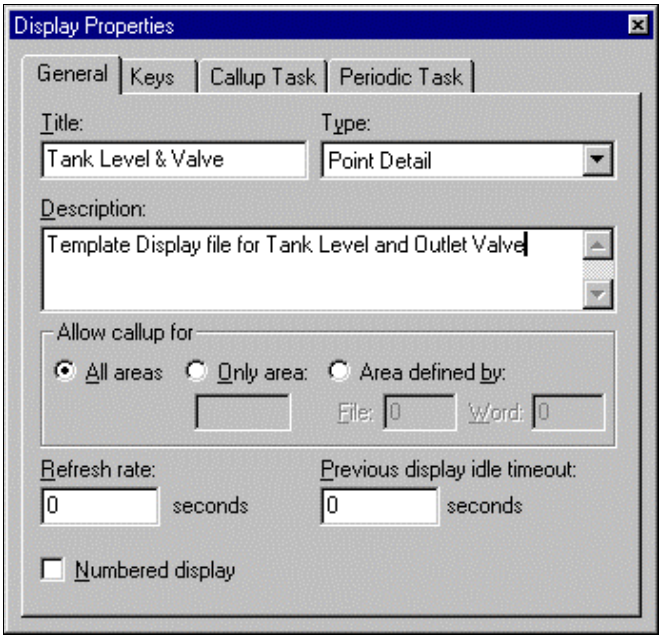
Lab Exercise – Using Container Points and Template Displays

Introduction

Proceed with the lab exercise listed below. Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Creating a Template Display

This exercise will enable you to create a Template Display for use with Container Points.

Step	Action
1	Start Display Builder and open a new Display file.
2	Open the Display Properties and set the following **General** properties: 

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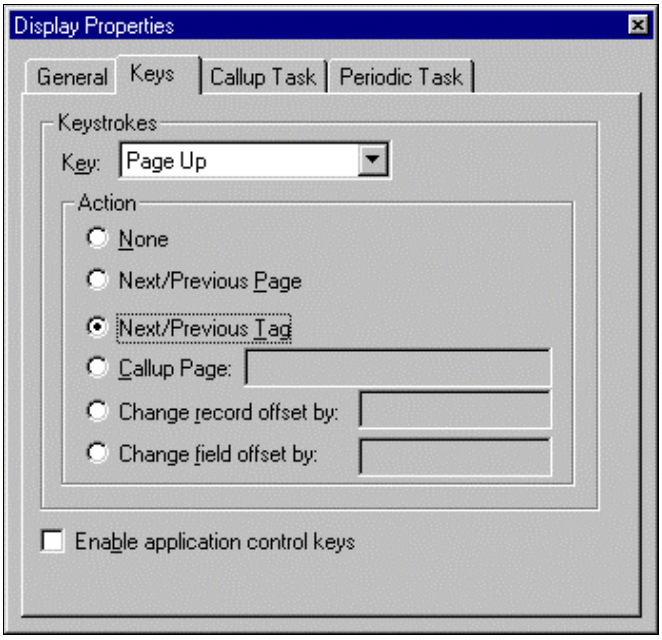
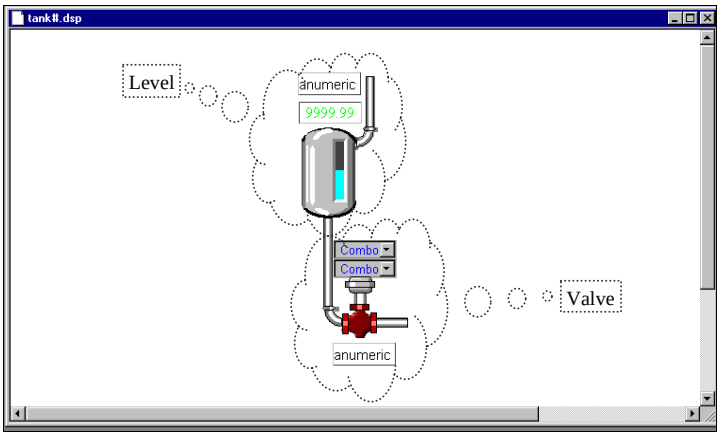
Lab Exercise - Using Container Pts & Template Displays …contd

3	Click the **Keys** tab and set the following data: 
4	Create the following display using standard Display Builder tools (hint: don't reinvent wheels, copy from 302.dsp): 

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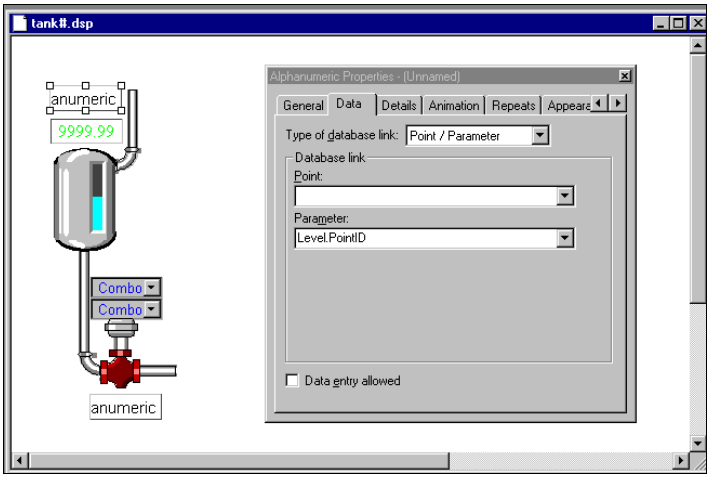
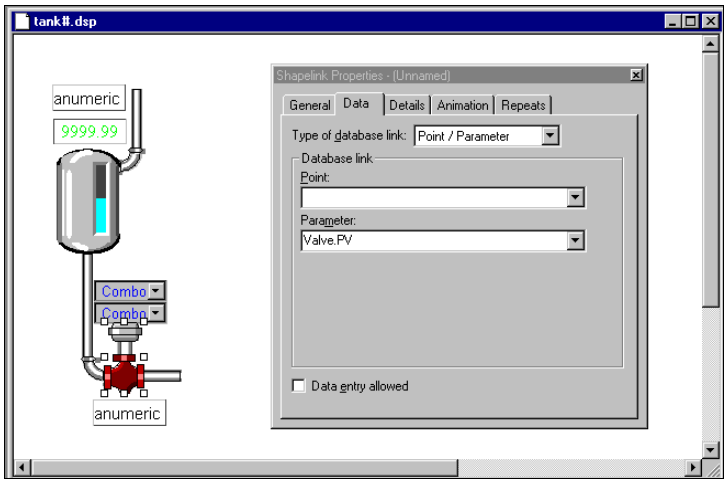
Lab Exercise - Using Container Pts & Template Displays …contd

5	Animate the "Level" objects in Step 4 as follows: 
6	Animate the "Valve" objects in Step 4 as follows: 
7	Save the file on the Server as `...\abstract\Tank#.dsp`.

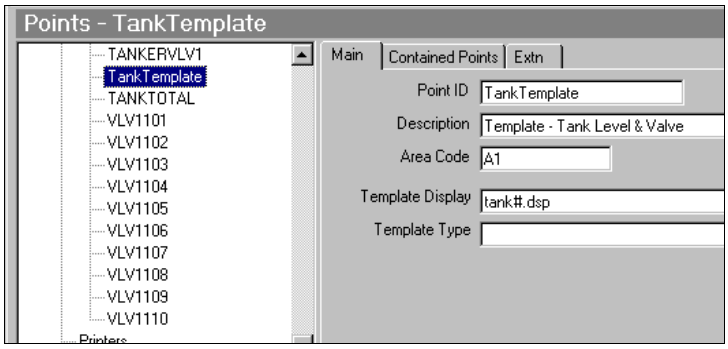
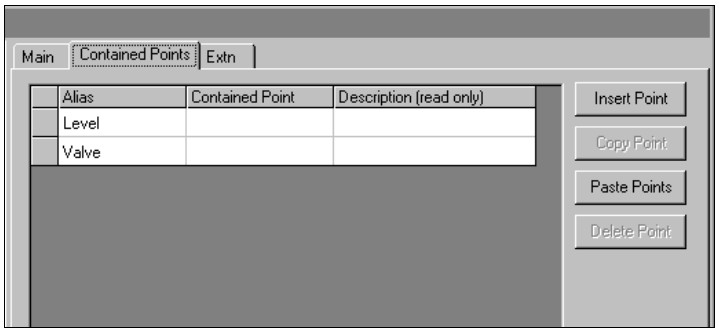
Lab Exercise - Using Container Pts & Template Displays …contd

Introduction

Proceed with the lab exercise listed below. Ask your Course Manager for any assistance if you are not sure what you are expected to do.

Creating Container Points

This exercise will enable you to create Container Points and display them on Station using their associated Template Display.

Step	Action
1	Start Quick Builder and add a new Container Point named `TankTemplate`.
2	Under the **Main** tab set the following properties: 
3	Click the **Contained Points** tab and define the following two **Aliases**: **Attention** The **Contained Point** and **Description** fields are left blank at this stage since we are only defining a template from which the real Container Points will be duplicated. 

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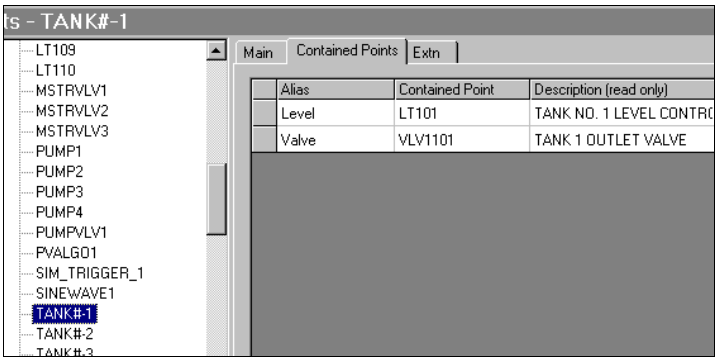
Lab Exercise - Using Container Pts & Template Displays …contd

4	Duplicate the point `TankTemplate` six times to create the new points named: `Tank#-1`, `Tank#-2`, : `Tank#-6`. What is the most efficient way of doing this? Discuss with your Course Manager.
5	For each Container Point define the corresponding Contained Points: **Cont'r Point** — **Contained Points** TANK#-1 — LT101 & VLV1101 TANK#-2 — LT102 & VLV1102 : — : — : TANK#-6 — LT106 & VLV1106 **Attention** Click on a blank area of the Quick Builder window before moving from one Container Point to the next. Failure to do this will result in loss of the last piece of data entered on the previous point. 
6	Download the new Container Points. Do the scan tables need to be updated? Discuss with your Course Manager.
7	Display your Container Points in Station. How do you do this? How do you display each Container Point in sequence? Discuss with your Course Manager.