

Exercise 9 – Dynamic Symbols

The dynamic symbol widget was created in order to build palettes of symbols, such that the various image states of each could be displayed without requiring large amounts of screen real estate.

They may also be used to provide a limited degree of animation.

In this exercise, you will create a dynamic symbol using the aperture symbol template. You will experiment with the various dynamic symbol display options.

- Execute edm

```
edm -m "db=student#"
```

- Create a new window

Free-Run Continuous Mode

Without Out-Of-Band State

- Create the aperture dynamic symbol instance
 - Drag a small box with the left mouse button and release the button
 - Select *Graphics --> Dynamic Symbol* from the menu
 - *DynSymbol File* = apSym
 - *Use Gate* = False
 - *Gate On Mouse-over* = False
 - *Continuous* = True
 - *Rate (s)* = 1
 - *initial* = 1
 - *Show OOB State* = False
 - *Preserve Original Size* = True
 - *Preserve Original Colors* = True
- Save the file as exercise9.edl
- Execute display
- The non-out-of-band symbol states cycle continuously at the specified rate
- Return display to edit mode

With Out-Of-Band State

- Create another aperture dynamic symbol instance
 - Drag a small box with the left mouse button and release the button
 - Select *Graphics --> Dynamic Symbol* from the menu
 - *DynSymbol File* = apSym
 - *Use Gate* = False
 - *Gate On Mouse-over* = False
 - *Continuous* = True
 - *Rate (s)* = 1
 - *initial* = 0
 - *Show OOB State* = True
 - *Preserve Original Size* = True
 - *Preserve Original Colors* = True
- Save the file as exercise9.edl
- Execute display
- All symbol states cycle continuously at the specified rate
- Return display to edit mode

Continuous Mode With PV Gate

Without Out-Of-Band State

- Create a menu button for the gate pv
 - Drag a small box with the left mouse button and release the button
 - Select *Controls --> Menu Button* from the menu
 - *Control PV = \$(db):e1*
- Create another aperture dynamic symbol instance
 - Drag a small box with the left mouse button and release the button
 - Select *Graphics --> Dynamic Symbol* from the menu
 - *DynSymbol File = apSym*
 - *Use Gate = True*
 - *Gate On Mouse-over = False*
 - *Gate Up PV = \$(db):e1*
 - *Gate Up Value = 1*
 - *Gate Down PV = \$(db):e1*
 - *Gate Down Value = 0*
 - *Continuous = True*
 - *Rate (s) = 0.1*
 - *initial = 1*
 - *Show OOB State = False*
 - *Preserve Original Size = True*
 - *Preserve Original Colors = True*

Note that the *Gate Up PV* turns on continuous mode and the *Gate Down PV* turns it off.

- Save the file
- Execute display
- The non-out-of-band symbol states cycle continuously at the specified rate when the gate up pv value is equal to the gate up value
- Return display to edit mode

Continuous Mode With Mouse-over Gate

Without Out-Of-Band State

- Create another aperture dynamic symbol instance
 - Drag a small box with the left mouse button and release the button
 - Select *Graphics --> Dynamic Symbol* from the menu
 - *DynSymbol File* = apSym
 - *Use Gate* = True
 - *Gate On Mouse-over* = True
 - *Continuous* = True
 - *Rate (s)* = 0.1
 - *initial* = 1
 - *Show OOB State* = False
 - *Preserve Original Size* = True
 - *Preserve Original Colors* = True
- Save the file
- Execute display
- The non-out-of-band symbol states cycle continuously at the specified rate when the mouse is over the symbol
- Return display to edit mode

Up-Down Mode With PV Gate

Without Out-Of-Band State

- Create another aperture dynamic symbol instance
 - Drag a small box with the left mouse button and release the button
 - Select *Graphics --> Dynamic Symbol* from the menu
 - *DynSymbol File* = apSym
 - *Use Gate* = True
 - *Gate On Mouse-over* = False
 - *Gate Up PV* = \$(db):e1
 - *Gate Up Value* = 1
 - *Gate Down PV* = \$(db):e1
 - *Gate Down Value* = 0
 - *Continuous* = False
 - *Rate (s)* = 0.1
 - *initial* = 1
 - *Show OOB State* = False
 - *Preserve Original Size* = True
 - *Preserve Original Colors* = True
- Save the file
- Execute display
- When the button becomes true, the non-out-of-band symbol states cycle up at the specified rate and stop. When the button becomes false, the states cycle down and stop.
- Return display to edit mode

Up-Down Mode With Mouse-over Gate

Without Out-Of-Band State

- Create another aperture dynamic symbol instance
 - Drag a small box with the left mouse button and release the button
 - Select *Graphics --> Dynamic Symbol* from the menu
 - *DynSymbol File* = apSym
 - *Use Gate* = True
 - *Gate On Mouse-over* = True
 - *Continuous* = False
 - *Rate (s)* = 0.1
 - *initial* = 1
 - *Show OOB State* = False
 - *Preserve Original Size* = True
 - *Preserve Original Colors* = True
- Save the file
- Execute display
- When the mouse pointer is over the symbol, the non-out-of-band symbol states cycle up at the specified rate and stop. When the mouse pointer moves off the symbol, the states cycle down and stop.
- Return display to edit mode