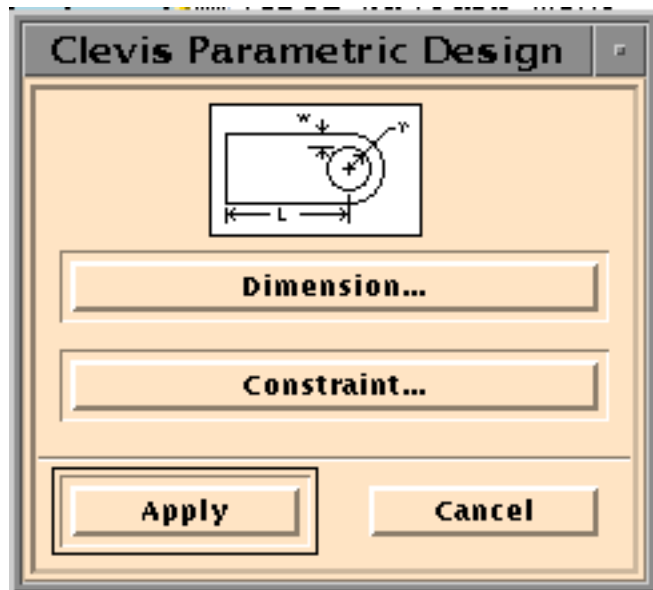


---

## EXERCISE 16

# *Clevis Icon*



### Objectives:

- Revise the Clevis Parametric Design Form to include an icon



**Exercise Description:**

In this exercise, you will modify class `clevis_ui` to present an icon at the top of the form. The icon will indicate the meaning of the input values for clevis radius, width and length.

The exercise requires that you use the bitmap editor to create the clevis icon.

**Files:**

All the files that used in this exercise are listed below. Each list includes the file, where it originated, and a summary of information of how it relates to the exercise.

File	Supplied/Created	Description
<code>clevis_ui.pcl</code>	Created	This file should have already been created in an earlier exercise.

**Exercise Procedure:**

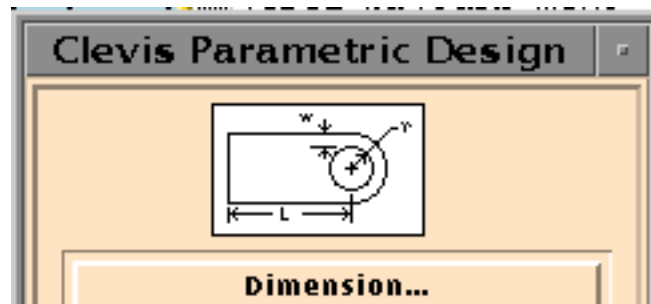
1. Create an icon similar to the one shown below. The bitmap command varies on different machines:

**SGI:** `/usr/bin/X11/bitmap -size 80x50 clevis.icon`

**HP:** `/usr/contrib/bin/X11/vueicon -size 80x50 clevis.icon`

**SUN Solaris:** `/usr/openwin/bin/bitmap -size 80x50  
clevis.icon`

2. Using the bitmap editor, create the icon which looks like:



3. Using the vi editor (or jot), edit `clevis_ui.pcl` to add a label icon to the top of the form.
4. When you have completed generating the function,

---

run it through the C Pre-Processor. For the machine specific commands refer to the previous exercises.

```
cpp -I/patran/patran3/customization clevis_ui.pcl clevis_ui.cpp
```

5. Compile clevis\_ui.cpp

Start the MSC/PATRAN compiler by typing p3pclcomp in your xterm window.

Then input the file by typing the following line:

```
!!input clevis_ui.cpp
```

All the error messages and diagnostics will be written in the xterm window under the previous lines.

6. Start MSC/PATRAN by typing p3 in your xterm window.
7. Test the function by picking Exercise 16 under the training menu.

**Sample Solution:**

```

:::::::::::::
clevis_ui.pcl
:::::::::::::
/*$$ Use of PCL in creating customized forms/widgets
*
* Purpose:
* Create the user interface for the Clevis Design Project.
*
* Input:
* <None>
*
* Output:
* <None>
*
* Log:
*
* Notes:
*
*/

#include "appforms.p"

CLASS clevis_ui

    /* Variable initialization */

    CLASSWIDE widget form_id, @
    dimension_button, @
    constraint_button, @
    apply_button, @
    cancel_button

    FUNCTION INIT()

    REAL      x_pos,y_loc

    /*
    * Create the form
    */

    form_id=UI_FORM_CREATE(                                     @
        /* callback      */ /* "",                               @
        /* x              */ /* FORM_X_LOC,                       @
        /* y              */ /* FORM_Y_LOC,                       @
        /* position      */ /* "UL",                             @
        /* width          */ /* FORM_WID_SML,                     @
        /* height         */ /* FORM_HGT_FULL,                    @
        /* label          */ /* "Clevis Parametric Design",      @
        /* iconname       */ /* "",                               @
        )

    y_loc = FORM_T_MARGIN

    /*
    * Create the icon
    */

```

```

x_pos = FRAME_WID_SINGLE / 2. - @
80. * PIXEL_WID / 2.

ui_labelicon_create(                                     @
/*      parent      */   form_id,                       @
/*      lab_name    */   "",                             @
/*      x           */   x_pos,                         @
/*      y           */   y_loc,                         @
/*      icon        */   "clevis.icon"                  )

y_loc += 50. * PIXEL_HGT + INTER_WIDGET_SPACE

/*
* Create the "Dimension" button
*/

dimension_button = ui_button_create(                    @
/*      parent      */   form_id,                       @
/*      callback    */   "dimension_cb",                @
/*      x           */   BUTTON_FULL_X_LOC1,            @
/*      y           */   y_loc,                         @
/*      width       */   BUTTON_WID_FULL,               @
/*      height      */   0.0,                           @
/*      label       */   "Dimension...",                 @
/*      labelinside */   TRUE,                           @
/*      highlight   */   TRUE                            )

y_loc += BUTTON_HGT + BUTTON_DEFAULT_BORDER_HGT + @
          2*INTER_WIDGET_SPACE

/*
* Create the "Constraint button
*/

constraint_button = ui_button_create(                   @
/*      parent      */   form_id,                       @
/*      callback    */   "constraint_cb",                @
/*      x           */   BUTTON_FULL_X_LOC1,            @
/*      y           */   y_loc,                         @
/*      width       */   BUTTON_WID_FULL,               @
/*      height      */   0.0,                           @
/*      label       */   "Constraint...",                 @
/*      labelinside */   TRUE,                           @
/*      highlight   */   TRUE )

y_loc += BUTTON_HGT + BUTTON_DEFAULT_BORDER_HGT + @
          2*INTER_WIDGET_SPACE

/*
* create the separator
*/
ui_separator_create( form_id, EMPTY_STR, @
ZERO, y_loc, @
FORM_WID_SML, TRUE )

y_loc += LINE_THICKNESS + INTER_WIDGET_SPACE

```

```

/*
 * Create the "Apply" button
 */

apply_button = ui_button_create(                                     @
    /* parent */ form_id,                                         @
    /* callback */ "apply_cb",                                     @
    /* x */ BUTTON_HALF_X_LOC1,                                   @
    /* y */ y_loc,                                               @
    /* width */ BUTTON_WID_HALF,                                 @
    /* height */ 0.0,                                           @
    /* label */ "Apply",                                         @
    /* labelinside */ TRUE,                                       @
    /* highlight */ TRUE )

/*
 * Create the "Cancel" button
 */

cancel_button = ui_button_create(                                   @
    /* parent */ form_id,                                         @
    /* callback */ "cancel_cb",                                    @
    /* x */ BUTTON_HALF_X_LOC2,                                   @
    /* y */ y_loc,                                               @
    /* width */ BUTTON_WID_HALF,                                 @
    /* height */ 0.0,                                           @
    /* label */ "Cancel",                                        @
    /* labelinside */ TRUE,                                       @
    /* highlight */ FALSE )

y_loc += BUTTON_DEFAULT_HGT + FORM_B_MARGIN

ui_wid_set( form_id, "HEIGHT", y_loc )

END FUNCTION

FUNCTION DISPLAY()

    ui_form_display( "clevis_ui" )

END FUNCTION

FUNCTION dimension_cb()

ui_exec_function("dimension", "display")

END FUNCTION /* dimension_cb end of Function */

FUNCTION constraint_cb()

ui_exec_function("clevis_loads", "display")

END FUNCTION /* constraint_cb end of Function */

FUNCTION apply_cb()

```

---

```
/*
 * calling the routines to create the Clevis Design
 */

> lug_create()
> lug_mesh()
> lug_load()

END FUNCTION /* apply_cb */

FUNCTION cancel_cb()

/*
 * Save the data entered in the dimension & constraint forms
 * and hide all of the forms!!
 */

ui_form_hide( "clevis_ui")

END FUNCTION /* cancel_cb */

END CLASS /* clevis_ui */
```