

Lab 13-2 Creating a Cellview

Objective: To use SKILL functions to create a cellview containing several rectangles.

In this lab, you write a SKILL function to do these tasks:

- Open a cellview.
- Add rectangles to the cellview.
- Save the cellview.

Requirements

Make the *TrRectangles* function accept these four arguments:

- *libName*, *cellName* and *viewName* specify the design.
- *rectList* is a list of rectangle descriptions, such as
("metal1" 0:0 .5:.5)

Make the *TrRectangles* function do the following tasks:

- Open the cellview.
- Add rectangles to the specified design with the corresponding layer name and bounding box.
- Return a list of the "rect" database objects.

You can assume that the layer names and bounding boxes are valid.

Getting Started

Before you write the SKILL function, try the following steps to familiarize yourself with the actions your function performs.

1. In the CIW, enter

```
newCV = dbOpenCellViewByType( "master" "new" "layout"
    "maskLayout" "w" )
```

What does the newCV variable now contain?

2. In the CIW, enter

```
newRect = dbCreateRect( newCV "metal1" list( 0:0 .5:.5 ) )
```

What does the newRect variable now contain?

3. In the CIW, enter

```
dbSave( newCV )
dbClose( newCV )
```

4. Use the *geOpen* function to open the *Cells new layout*.

Are you satisfied with what you see?

Writing Your Function

1. Write the *TrRectangles* function based on the requirements.

Testing Your Solution

1. In the CIW, enter

```
geOpen(
    ?lib "master"
    ?cell "new"
    ?view "layout" )
```

2. Delete all the shapes in the design. In the CIW, enter

```
geSelectAll()
foreach( dbObject geGetSelSet()
    dbDeleteObject( dbObject))
```

3. In the CIW, enter

```
TrRectangles( "master" "new" "layout"  
  list(  
    list( "metal1" 0:0 1.0:1.5 )  
    list( "poly1" 1:1 2:3 )) )
```

⇒ Check your work against the solution on the next page.

Sample Solution

The `~/SKILL/DataModels/Solutions/Rectangles.il` file contains the solution.

```
procedure( TrRectangles( libName cellName viewName rectList )
  let( ( cv )
    cv = dbOpenCellViewByType( libName cellName viewName
      "maskLayout" "w" )
    when( cv
      foreach( mapcar rectDescription rectList
        dbCreateRect(
          cv
          car( rectDescription )
          cdr( rectDescription )
        )
      ) ; foreach
    ) ; when
  ) ; let
) ; procedure
```

Lab Summary

In this lab, you wrote a function that adds several rectangles to a cellview using the *dbCreateRect* function.

