

## Glade training part 1 - lab

---

- Start in the training directory
  - `cd glade_training`
- Open Glade from the cmd line or icon
- View the techfile
  - (windows) notepad graycode.tch
  - Linux/OSX vi graycode.tch
- Start Glade
  - (windows) glade
  - Linux/OSX glade&
- Import the techfile
  - File->Import->Import Techfile...
  - Click on the file browser icon on the dialog
  - Select the 'graycode.tch' file
  - Rename the library from 'default' to 'gray'
  - Press OK
  - Note the library browser contains the new, empty, library
    - If the library browser is not visible, use the Tools->Library Browser menu cmd to open it.
- Import the GDS file
  - File->Import->Import GDS2...
  - Click on the file browser icon next to the Input File field
  - Select the 'graycode.gds' file
  - Press OK

- Note that Glade will automatically open a top level cell (typically the 'ECAD3' cell).
  - Note the library browser 'gray' library shows the cells imported from GDS2.
- If the LSW is not already open, open it with Tools->LSW
  - You can position the LSW dock window by dragging it. For example drag it onto the file browser dock window to give either 2 stacked windows or 2 tabbed windows
- Zoom into a portion of the design by pressing the right mouse button (RMB), holding and dragging it upwards to the left or right.
  - Press bindkey 'f' to fit the viewport to the design
- Repeat but drag downwards to zoom out.
  - Again use the 'f' bindkey to return to the full design
- Open another cell using the library browser. Expand the 'gray' library if not already expanded and then expand the 'JKFF' cell. Double click on the 'layout' view with the left mouse to open that cellView.
- Click on the 'Window' menu and note that both windows are listed with a tick on the JKFF window. Clicking on the menu entries will make that cellView the active cellView.
- With the ECAD3 cell as the active open cellView, change the Stop level spinbox from 99 to 0. Note how the contents of instances are now not drawn; only the top level routing shapes and the instance bounding boxes are drawn.
  - You can toggle the stop level between 0 and 99 using the shift+f and ctrl+f bindkeys (on OSX the cmd key is used instead of ctrl).
  - Open the View->Display Options... dialog ('e' bindkey). Change the 'Show Instance Names' radio button to 'Instance' and press OK. The instance names are shown. Do the same but change the radio button to 'master' and press OK. The instance master cell names are shown.

- Open the World View (Tools->World View) and make it a small window e.g. stacked under the Library browser.
  - Zoom into an area on the main canvas; note how the area of the canvas is shown as a yellow box in the World View dock window.
  - Use the left mouse button to drag this box in the World View, and see the canvas area move with it.
- Select objects using the left mouse button (LMB). Try using shift+LMB to add to the selection, ctrl+LMB to remove from the selection, area select using LMB and add/remove area select using the shift and ctrl keys.
  - Note how the status bar indicates the name of the instance selected or the layer of a shape selected.
  - Also note the number selected is shown on the status bar.
  - Use View->Zoom Selected ('x' bindkey) to zoom to fit the selected object.
- Query a selected object using the 'q' bindkey.
- Display the Edit->Find/Replace.. menu ('shift+s' bindkey). Click on 'Add Criteria' and choose 'cell name', '==' and 'PAD' as the criteria. Make sure 'Find action' is 'Select' and click 'Find'. Check there are all PAD cell instances selected.

This concludes the lab session for Part 1.