MENTOR GRAPHICS - Some Useful Hints

This handout is an informal collection of some commonly used tasks that you will perform in the Mentor Graphics CAD tools in this course. This is by no means comprehensive. For more details, please refer to the Bob’s Copy Shop material.

Design Manager (dmgr)

The Mentor Graphics Design Manager provides a graphic interface for all the tools in the Mentor Graphics Suite. Since you will be using only two tools in this course (Design Architect and Quicksim), you will not be using the Design Manager extensively. However, if you want to delete any design or move designs between directories under the mgc directory, it is highly recommended that you use dmgr.

Design Architect (da)

Keyboard shortcuts

There are many keyboard shortcuts in Design Architect. Some of the most frequently used actions are listed below.

1. Placing an object on the sheet
After you drag and drop a component from the library/selection window, the part will be in the selected mode. To place it permanently in that position, press F2. You can edit the part later by clicking anywhere inside it. It is important that you press F2 after every operation so that you don’t inadvertently undo/delete anything,

2. Drawing a wire
Press F3. A small cross gets attached to the mouse pointer. This is an indication that the pointer can now be used to draw a wire. Left-click for starting point of wire, left double-click for ending point.

3. Naming a port/net
Place your mouse pointer on the ‘NET’ text of the port (or the port name, in case you have already named it). Press Shift + F7. A box will appear at the bottom of the screen. Type in the new port name. For naming a net (wire/bus), click with the left mouse button on the net that you want to name (note that a left-click operation on any component/net selects that part). Right click on the selected net; you will see a menu. Click on ‘Name Nets:’. Type in the name in the box. (Though it is not necessary to name nets in small designs, the importance of naming nets becomes evident in larger designs).

Mouse Shortcuts

There are some interesting mouse shortcuts too. For example, you can draw a ’U’ with the mouse to undo the last change! There are many more like this. For now, you will find the following two shortcuts very handy:

1. Drawing a bus
Move the middle mouse button vertically upwards. A small cross gets attached to the mouse pointer. After that, the bus is drawn in the same way as a wire.
2. Zooming in/zooming out
Move the middle mouse button diagonally inwards (zoom in) or outwards (zoom out).

*Note:* When using mouse shortcuts, it is not necessary to make an exaggerated movement with the mouse. A short stroke will always do.

**Force files**

In this course, you will be using force files to simulate your design. Force files let you define the values of the signals in the circuit at different times.

It is recommended that you make a directory under `mgc` to keep force files.

From your home directory,

```
> cd mgc
> mkdir force_files
```

For this tutorial, the force file is located here: `~ravi/public/mux4_verify`

You have to copy it in your directory before you can input it to *quicksim*.

From your home directory,

```
> cp ~ravi/public/mux4_verify ./mgc/force_files/
```