

UNIVERSITY OF CALIFORNIA
College of Engineering
Department of Electrical Engineering and Computer Sciences
Last modified on September 10, 2001 by Hanching Fuh (hfuh@eecs.berkeley.edu)

Borivoje Nikolic

Lab #2: Layout Editing with MAX

EECS 141

1. Objective

This semester we are using a tool from MicroMagic called MAX. The purpose of this lab is to familiarize you with the nuances of MAX and to work out any "tools" problems with MAX and Exceed. MAX is essentially a graphical user interface which encapsulates MAGIC. MAGIC is a layout editor, developed here at Berkeley that keeps track of all design rule violations, and provides several tools that facilitate the creation and editing of complex layouts. MAX adds many powerful enhancements over MAGIC, allowing for an intuitive interface and lots of other bells and whistles.

2. Tasks

- The first thing you must do is make sure your account has been configured to use the MicroMagic software suite. If you haven't already done so, the following link has a step by step procedure outlining how to get Exceed and your UNIX accounts configured:
http://bwrc.eecs.berkeley.edu/classes/ICDesign/EE141_f00/SoftwareLabs/lab_setup.html
- Create an directory for your EE141 work in your root path:
`quasar% mkdir ee141`
- Create a directory inside the ee141 folder called lab2:
`quasar% mkdir ee141/lab2`
- Go to that directory and run MAX, the layout editing tool:
`quasar% max &`
- In this first software lab, all you have to do is run through the [MAX tutorial](#) and read through the [MAX online manual](#). This will familiarize you with MAX's editing and interface procedures as well as the commands. Work through the tutorial disregarding the sections with SUE (we'll get to her in the next lab).
- Create a layout plot of the design. From the tutorial, you will need to print out a copy of the four NAND gates and an inverter you generated using the `:array` command. The inverter can be created by copying the NAND cell and modifying it. To print your layout, either print to a postscript file and ftp it to the Win2000 machines in the lab or:
 - Maximize the MAX window on your screen.
 - Zoom in/out so that your design is completely visible in your window.
 - Capture the contents of the window on to the Windows clipboard by pressing Alt-PrintScreen
 - Open up a new Microsoft Word document and under page setup, make sure the document is in Landscape and the margins are set to 0.4 inches.
 - Paste the image into the document.
 - Print the document.
- Ask you lab TA for further assistance or updates with printing issues.

3. What To Turn In (Due 1 week after the lab)

This particular lab is not very demanding. To get credit for the lab, all you have to do is to be there and turn in the printouts of the four NAND gates with the inverter.