

**Due in class on Wednesday 19 April 2000
(Counts 5% of Your Class Grade)**

1. Do the **MAX+PLUS II Tutorial** in Section 3 of the Altera manual *MAX+PLUS II: Getting Started* (available in hardcopy in the VLSI Design Lab, and available online as PDF file from Altera, or as a local copy on the class web page). The materials and discussion in class on Monday 3 April should have given you a good overview of this tutorial.

Since you are already familiar with some of this material, and since the “result” files are all available online in the “max2work\chiptrip” directory, I would suggest that you go through this example as follows.

- a) Read through the entire tutorial.
- b) Since you already know how to use the Graphic Editor, mostly just skim that material and then copy over the files from the chiptrip directory.
- c) Use the Text Editor to enter all, or at least part of, the two AHDL files, so that you can see how it works, but don't enter all the text for the table in the auto_max.tdf file — instead, just copy that file from the chiptrip directory.
- d) Go through Session 4 slowly and carefully, since using the Waveform Editor to enter a state machine is new and different.
- e) Compile the project, look at the floorplan, etc.
- f) Simulate the system as described in Sessions 9 and 10.
- g) For simplicity, you do NOT have to program this project onto the UP1 Education Board, as described in Session 13, since this would probably be rather anti-climactic

Then, when you have the basic project working, make some changes to the map and go through the appropriate parts of the entry and compilation process again.

Turn in:

- a) a diagram showing your changes to the map
- b) printouts of all the components of the design
- c) a printout of the test vectors and simulation output that shows that that the circuit works as expected for various different routes through the map (note that this will probably require more than one simulation — in some ways, this is the most important part of the items that you have to turn in). Annotate your simulations to make sure I understand what each is simulating and what the inputs and outputs are.