

ECE 426 Fall 1998

Assignment 3

Creating Asynchronous Parts and Building and Using Packages

Copy the following files from `~fstiver/TA426/test_proj2` into a working directory:

`testbench.vhd`
`ex_tristate.vhd`

`ex_tristate.vhd` is an example of how to write a package and `testbench.vhd` demonstrates using a part from that package.

Assignment: Utilize the above examples to create a single package named *async_parts*. This package will contain the following simple gates (each gate must have a generic output delay):

<u>gate</u>	<u># of inputs</u>
and	2,3 and 4 input
or	2,3 and 4 input
not	1 input
nor	2,3 and 4 input
xor	2,3 and 4 input
nand	2,3 and 4 input
xnor	2,3 and 4 input
tri_state buffer	1 input

There should be only one file named *async_parts* containing all of the above parts.

What to turn in: Simulation waveforms for each part (but for only one of the input options) that demonstrates correct performance of the gate (use your discretion as to the output delay). Make sure that the waveform resolution is sufficient to see the delay. Indicate the delay used for each gate, and draw arrows on the waveform indicating the delay. Additionally, turn in a your code for the package. (Do not turn in your testbench code.)