

Starting point.

-) The student should have executed the operations included in the. A folder “**psm_work**” including the “**glade**” and **LTspice**” sub-folders should have been created. The layout.bat batch file should have been modified as indicated in the “DK_Installation.pdf” file, so that it should launch the glade program correctly.

Exercise preparation:

- a) Extract the Ese1_pkg.zip file into an empty directory. The directory Ese1_pkg will be created.
- b) Copy the library folder “prg_demo” into the glade subdir
- c) Copy the “schematic” subfolder into the LTSpice folder

Exercise execution:

- 1) Double-click on the “nand2.asc” file included into the “schematic” folder. LTspice should be launched and the complete nand2 cell should be created.
- 2) At this point the student may try to create the symbol of the nand2 cell and create a workbench where he can instantiate the nand2 cell and the sources required for the simulation. Please, follow the instructions of the “” file. This point can be skipped if the student wants to go straight to the layout phase.
- 3) Before starting the layout, open the nand2.asc schematic and save the spice netlist, (schematic netlist) following the instructions of program_instruction.pdf .
- 4) Open glade by clicking on the layout.bat file in the glade directory.
- 5) Open the prg_demo library. This loads the Design Kit settings (Technology file) and a single cell: nand2 which as single cell-view “layout”.
- 6) Open the nand2-layout cellview to see and inspect the layout.
- 7) Launch the DRC and see the result. It is possible to introduce errors (e.g. place a metal rectangle with a dimension smaller than 0.5 micron to see if an error is triggered).
- 8) Extract the cell (after eliminating all errors that may have been introduced at the previous point).
- 9) Start the LVS, comparing the “extracted” view with the schematic netlist saved before.
- 10) Introduce differences in the layout or schematic view, to see how the LVS find the discrepancies.
remember to extract again the netlist or the “extracted view” any time the schematic or layout views, respectively, are changed.