

Designing a Circuit in Altera Quartus 2

In this report, I will show the process of designing the circuit shown in figure 2.33 using Altera Quartus II software.

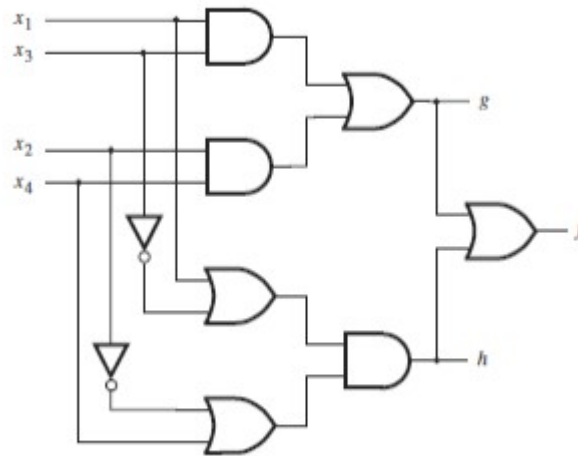
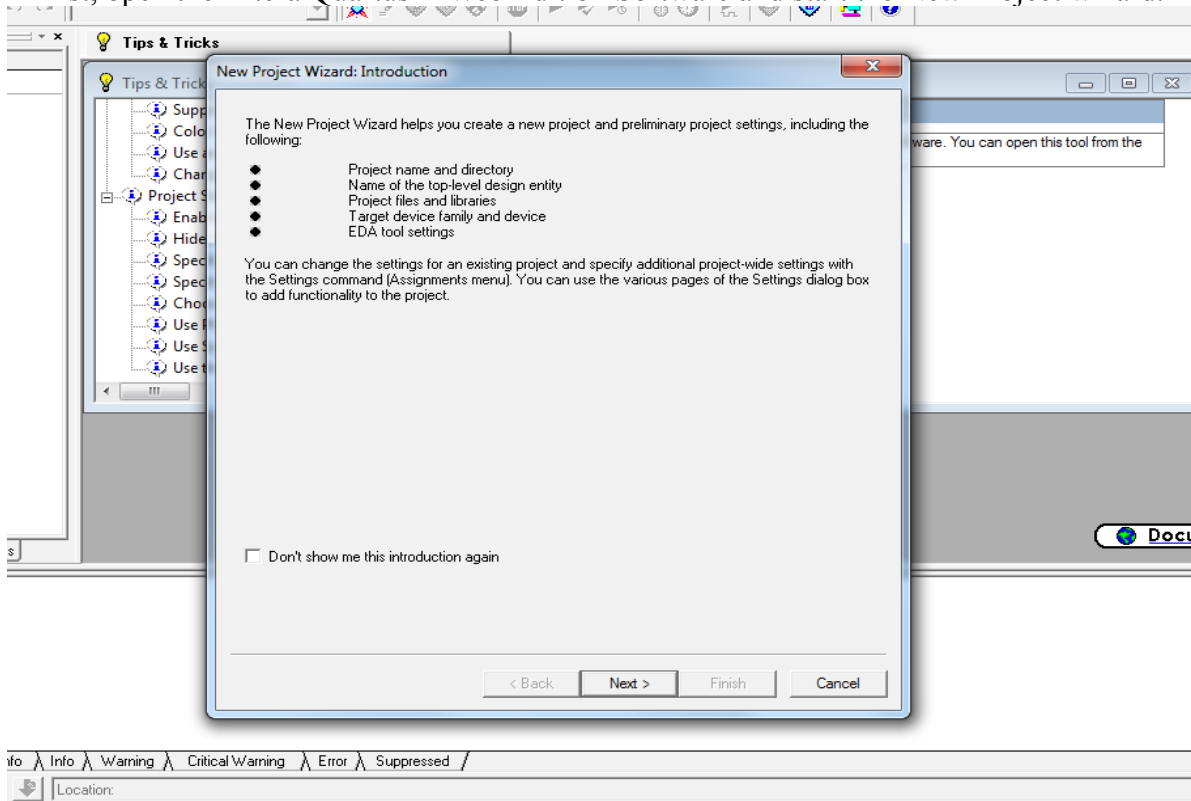
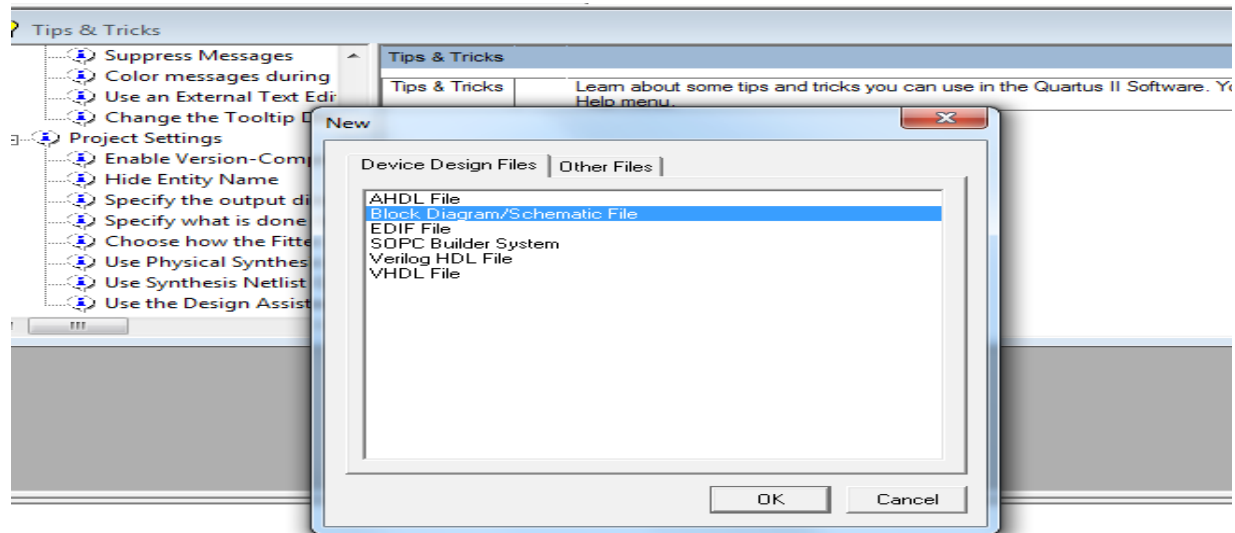


Figure 2.33 Logic circuit for the code in Figure 2.32.

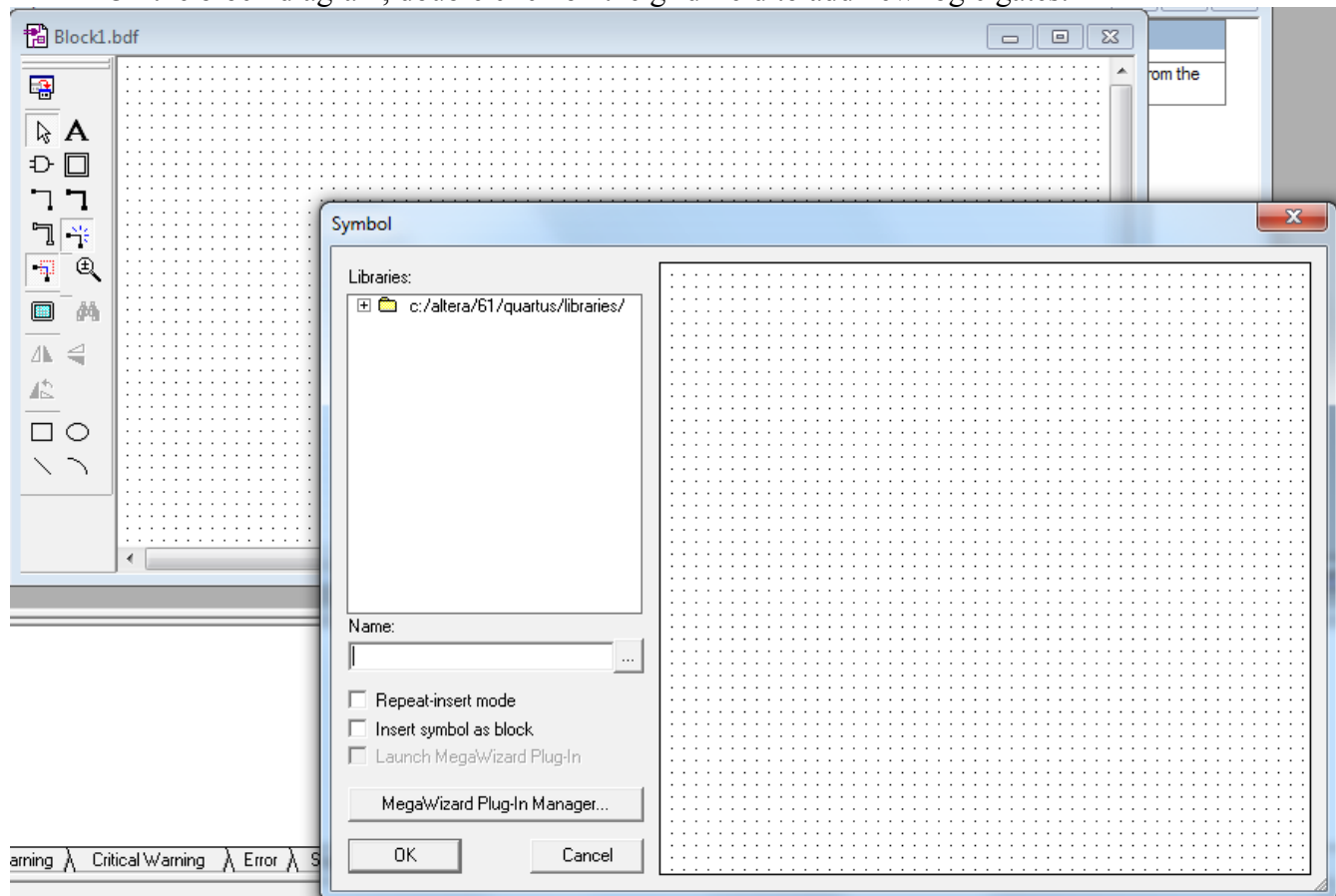
First, open the Altera Quartus II Web Edition Software and start the New Project wizard.



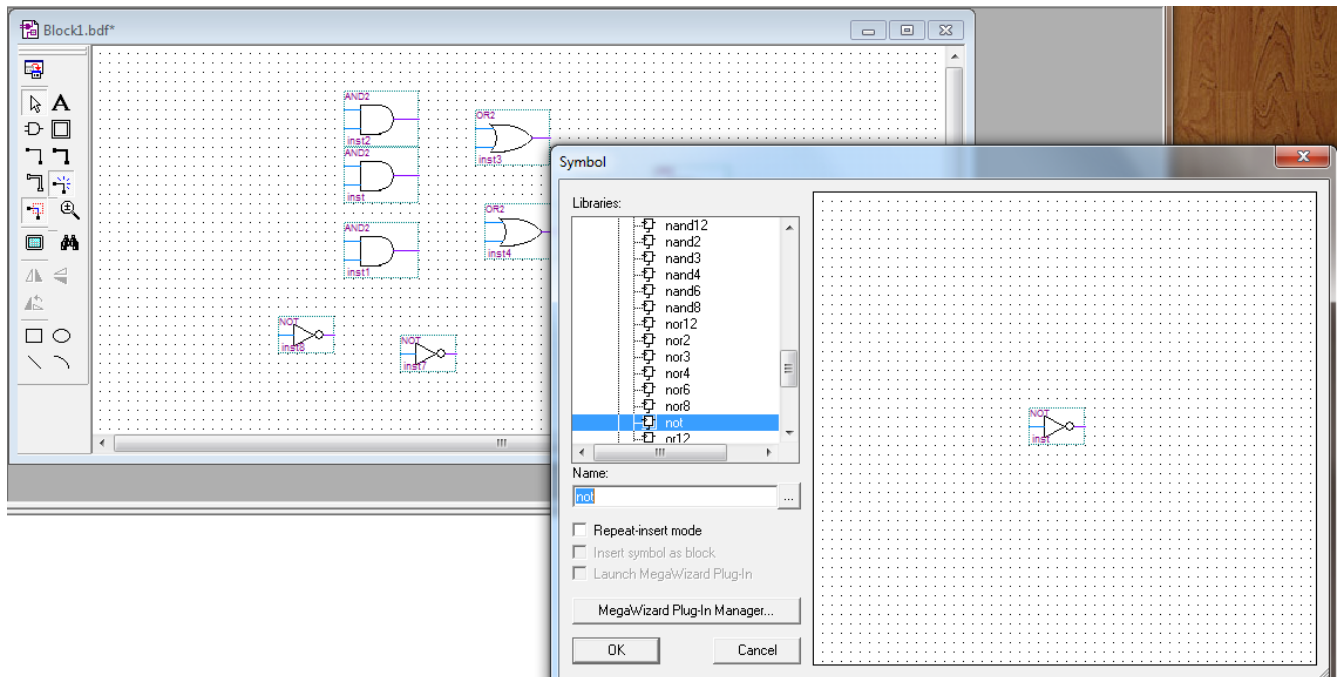
Continue through the New Project wizard using the default settings it has selected. We will only be designing the circuit in this report so it is not important to pick a specific circuit board. After closing the wizard, create a new block diagram by selecting file->new in the top left menu.



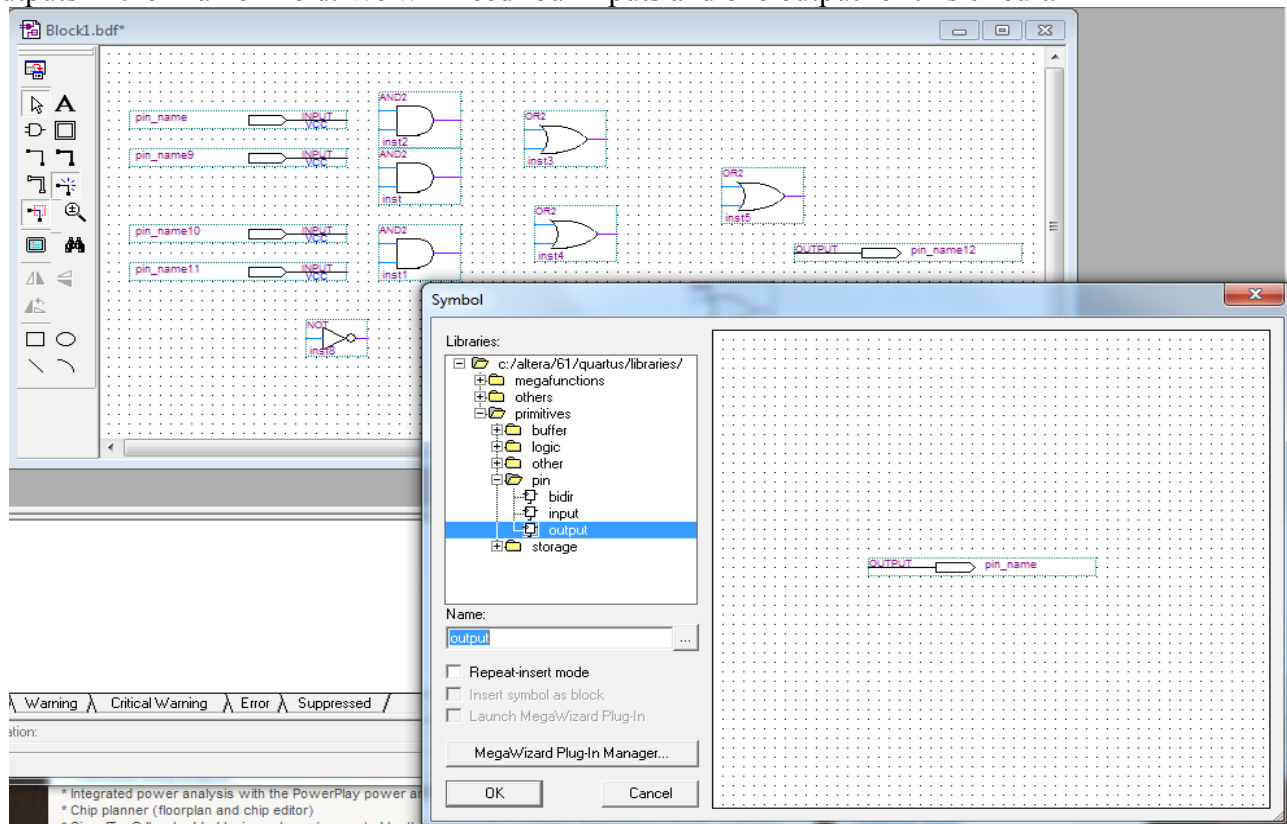
On the block diagram, double click on the grid field to add new logic gates.



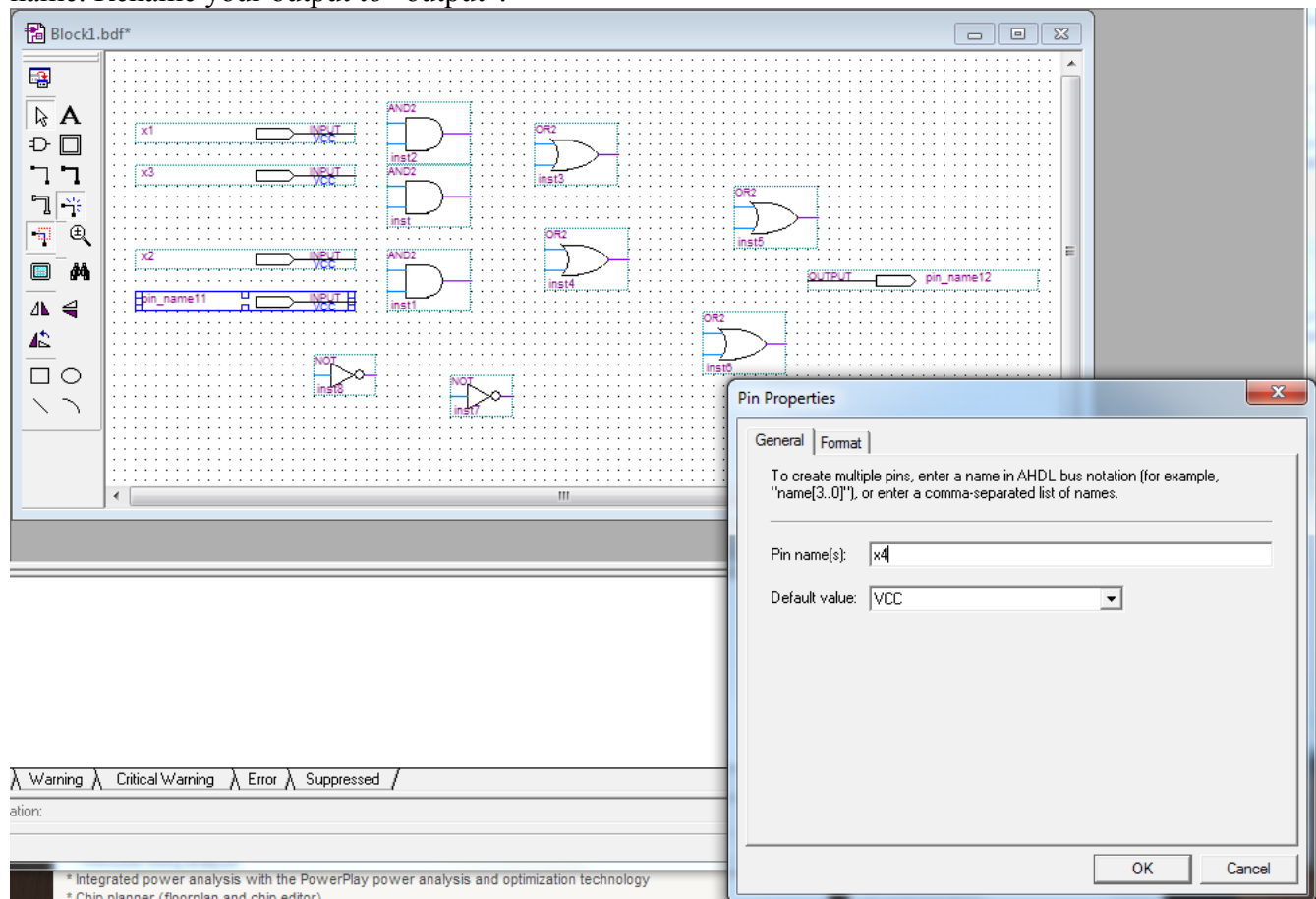
For this circuit, we will need three AND gates, four OR gates, and two NOT gates. Add these by typing in the gate names into the “Name field”. Type and2 for the AND gates, nor2 for the NOR gates, and not for the NOT gates. Do this until you have the proper number of logic gates on your grid.



We will also need inputs and outputs. Add these by typing in input for inputs and output for outputs in the “name” field. We will need four inputs and one output for this circuit.



Rename your inputs to x_1 through x_4 by double-clicking your inputs and typing in the new name. Rename your output to “output”.



Rearrange your and gates to match figure 2.33. Connect the gates by clicking the inputs or outputs on the logic gates and dragging them to the inputs or outputs of other gates. Rotate the NOT gates by pressing the “rotate 90 degrees” button in the toolbar.

