

ECE253F - Digital and Computer Systems

University of Toronto

Lab 1: Introduction to Quartus Prime CAD Tools

Introduction

The purpose of this exercise is to become familiar with the Quartus Prime CAD system that will be used for the first several lab exercises. This lab exercise will not be marked—the work is done on your own time, and on a computer outside of the lab rooms.

Introduction to the Quartus Prime CAD Software

Obtain the tutorial called *Quartus Introduction* from Altera's University Program website. Under the *Filter Materials* heading on the web page, set the drop-down called *Choose Quartus Version* to 16.0. Open the PDF of the tutorial that is listed under the heading *Verilog*.

Perform all of the steps of the tutorial up to Section 9. If you do not have access to the DE1-SoC lab board used in the course (that is, if you haven't purchased one), then you will not be able to perform the FPGA programming step in Section 9. If you have your own DE1-SoC board, then you can perform the steps in Section 9.2 and Section 10.

Introduction to Quartus Prime Simulation

The *Quartus Prime Introduction* tutorial discussed above contains some basic material about performing simulation. But more details on the simulation topic are available in the tutorial called *Introduction to Quartus Simulation*, which is also provided on Altera's University Program website. You should obtain this tutorial, again making sure to set the filter *Choose Quartus Version* to 16.0, and making sure that you open the PDF of the tutorial that is under the heading *Verilog*.

You can do all sections of this tutorial, but some parts of the Appendices may not be very meaningful to you until more material has been covered in the lectures.