CPE 487: Digital System Design

HW 2
Due: 2/2/18

In this homework, you will download the Xilinx ISE VHDL software used in this course and complete a tutorial to familiarize you with how to use this software.

1. Instructions Installing Xilinx ISE Software:

There are three different ways you can install the Xilinx WebPack software:

A. <u>You can install the software directly from the Xilinx website.</u> If you are using a Linux, you must use this method. Follow the detailed instructions in the document "Xilinx Download", a link to which is provided on the course website schedule page.

   The "Xilinx Download" document describes how to download and install Xilinx WebPack 13.1. This version is compatible with Windows 7 (both 32 and 64-bit) and Windows XP. If you are using Windows 8 or Windows 10, you must install WebPack version 14.7.

B. <u>You can install Xilinx WebPack 13.1 from a supplied DVD.</u> WebPack 13.1 is compatible with Windows 7 and Windows XP.

   Copy the folder Xilinx installation folder from the DVD into your *Downloads* folder. Open the installation folder and it should appear as shown in Figure 9 of the "Xilinx Download" document provided on the course website schedule page. Execute *xsetup.exe* and then follow the instructions in the "Xilinx Download" document starting at step 8.

   When you get to step 12, you will need to create a Xilinx account as described in steps 2 and 3 of the document. This will enable you to generate a free WebPack license as described in steps 12 and 13.

C. <u>You can install Xilinx Webpack 14.7 from a supplied pair of DVD's.</u> Note that WebPack 14.7 is required if you are using Windows 8 or 10.

   From DVD1, copy the folder *Xilinx_14.7_install* into your *Downloads* folder. From DVD2, copy the folder *idata_extra* into your Downloads folder. Now copy all the files in *idata_extra* and paste them into the *idata* folder in *Xilinx_14.7_install*. (Note: Do <u>not</u> copy the *idata_extra* folder itself – just copy the files in the *idata_extra* folder)

   Execute *xsetup.exe* (in the *Xilinx_14.7_install* folder) and then follow the instructions in the "Xilinx Download" document starting at step 8.

   When you get to step 12, you will need to create a Xilinx account as described in steps 2 and 3 of the document. This will enable you to generate a free WebPack license as described in steps 12 and 13.

2. Full Adder Tutorial

A *Full Adder Tutorial* is provided to help you become familiar with the operation of the WebPack software and the Xilinx ISim simulator. Download the tutorial and complete each of the tutorial steps.

2(a) Submit a report, including appropriate screen shots, demonstrating your completion of each of the steps (include some text discussion – <u>don't</u> submit a document containing <u>only</u> screen shots).

2(b) Answer the three questions at the end of the tutorial. Include screen shots of code and waveforms. Make sure the screen shots are at a size and resolution where you can see the waveforms and the timing of the transitions.

3. Feedback

Describe any problems you encountered in completing the installation and in making your way through the tutorial.