Computer Organization, Spring 2020

Lab 0: Tutorial for ModelSim PE Student Edition Simulator

Due: 2020/03/12

1. Goal

The purpose of this Lab is to familiar with ModelSim Simulator Tool.

2. Attached Files

Part 1: acs1.v, acs4.v, chip_core.v, clkgen.v, controller.v, spu.v and system.v.
Part 2: multiplication.txt;

3. Lab Description

Part 1

Step 1:

Go to https://www.mentor.com/company/higher_ed/modelsim-student-edition

ModelSim PE Student Edition

Free download of industry leading ModelSim® HDL simulator for use by students in their academic coursework.

Download Student Edition

Step 2:

Fill in your Information and accept the term of condition.

Step 3:

Download and Install modelsim-pe_student_edition.exe
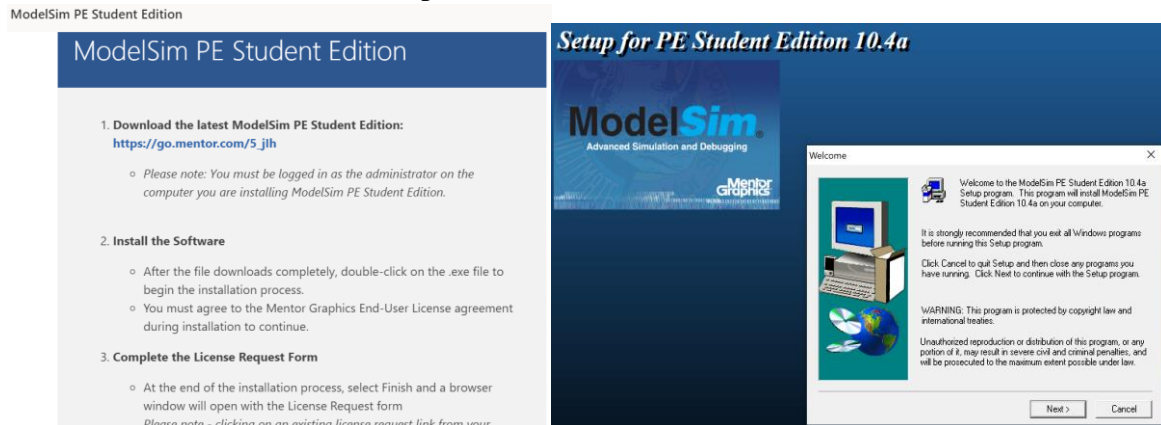
Step 4:

Fill in the form then follow the instruction given in your email.
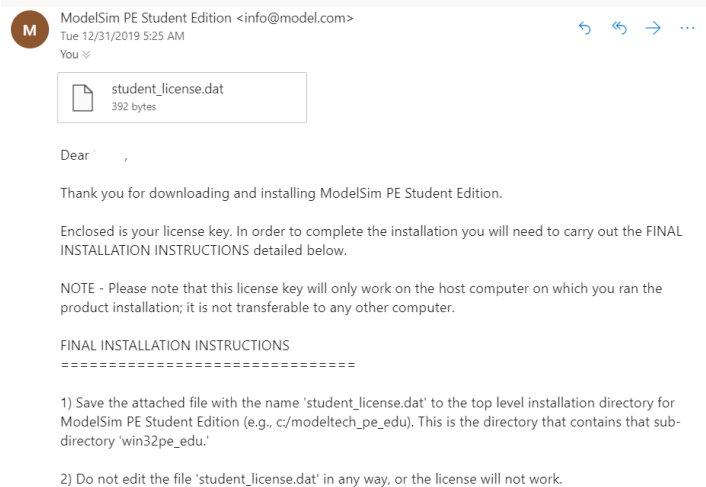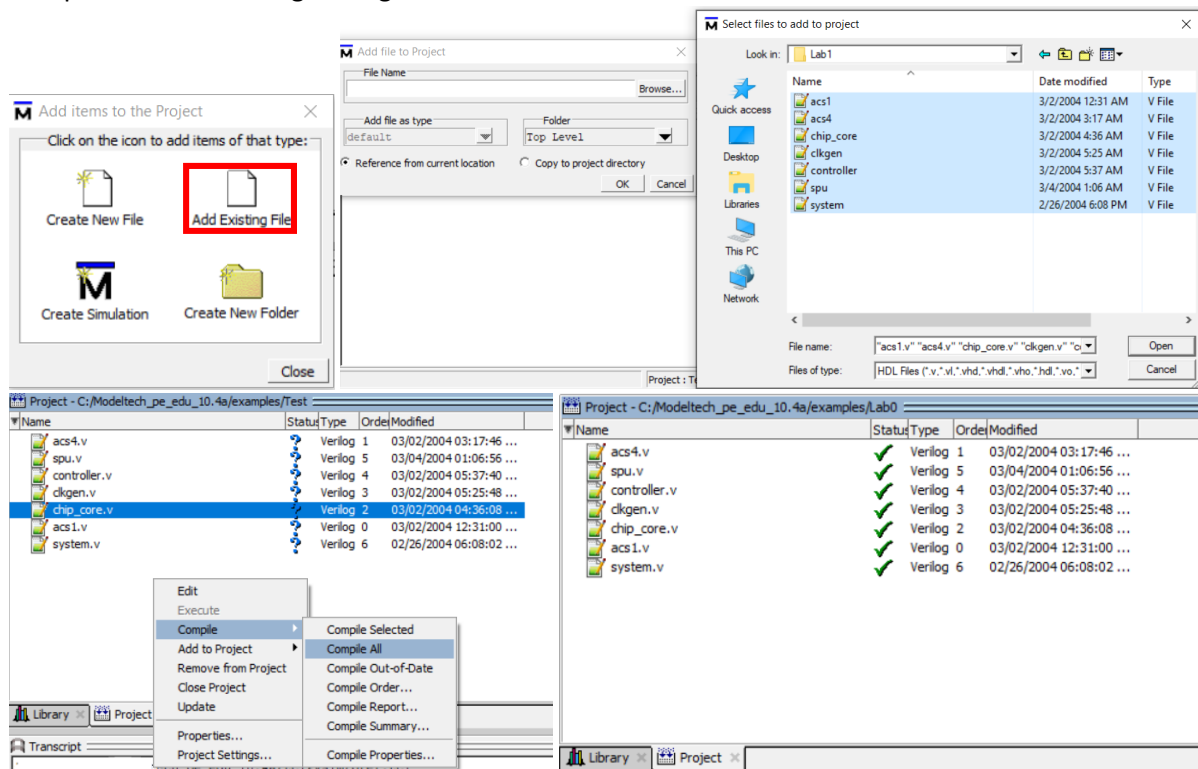
Step 5:

Run ModelSim PE Student Edition 10.4a.exe and create a project.
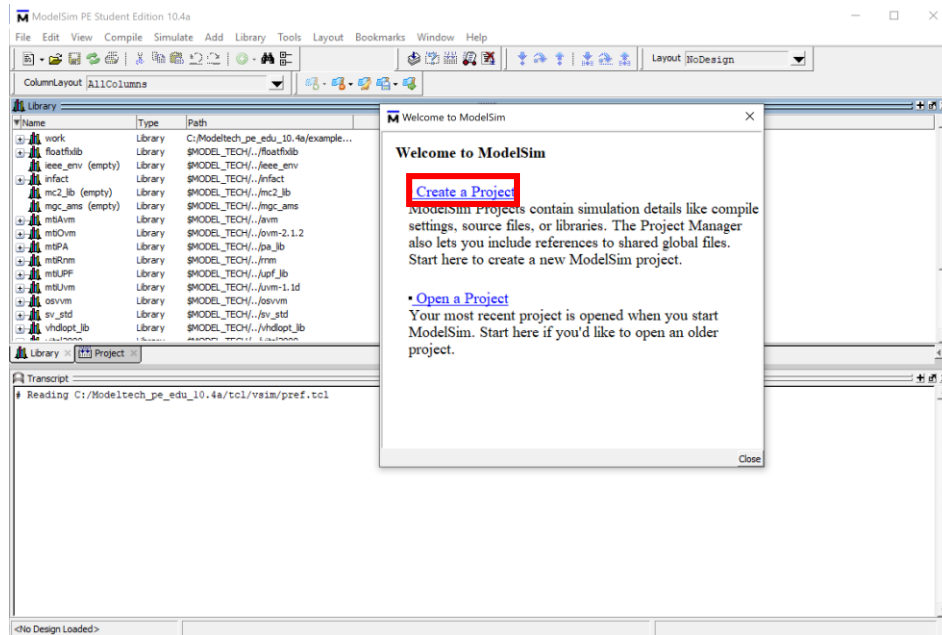
Step 6:

Add the following existing file to the project.
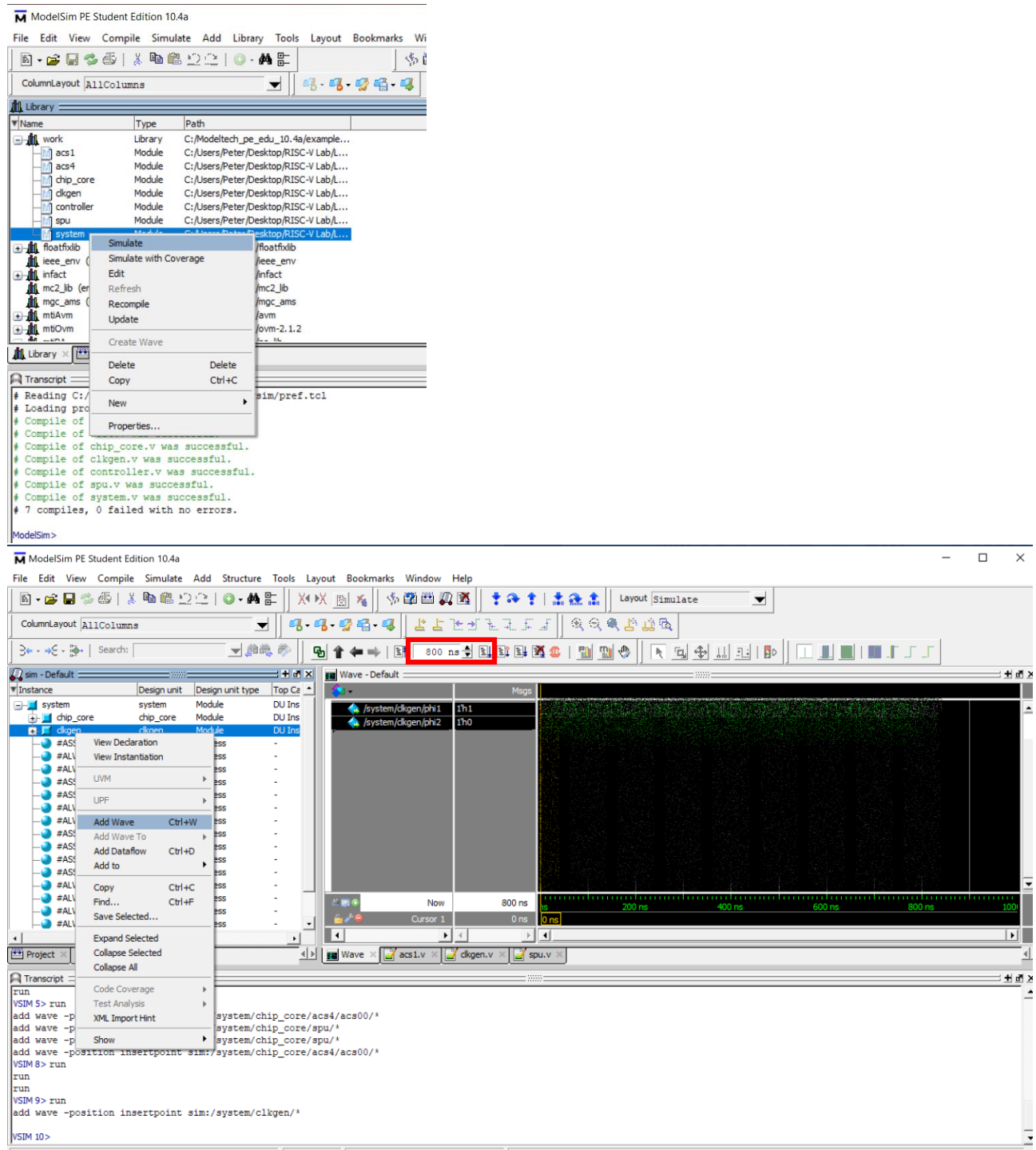
Compile all the following verilog file.

Step 7:

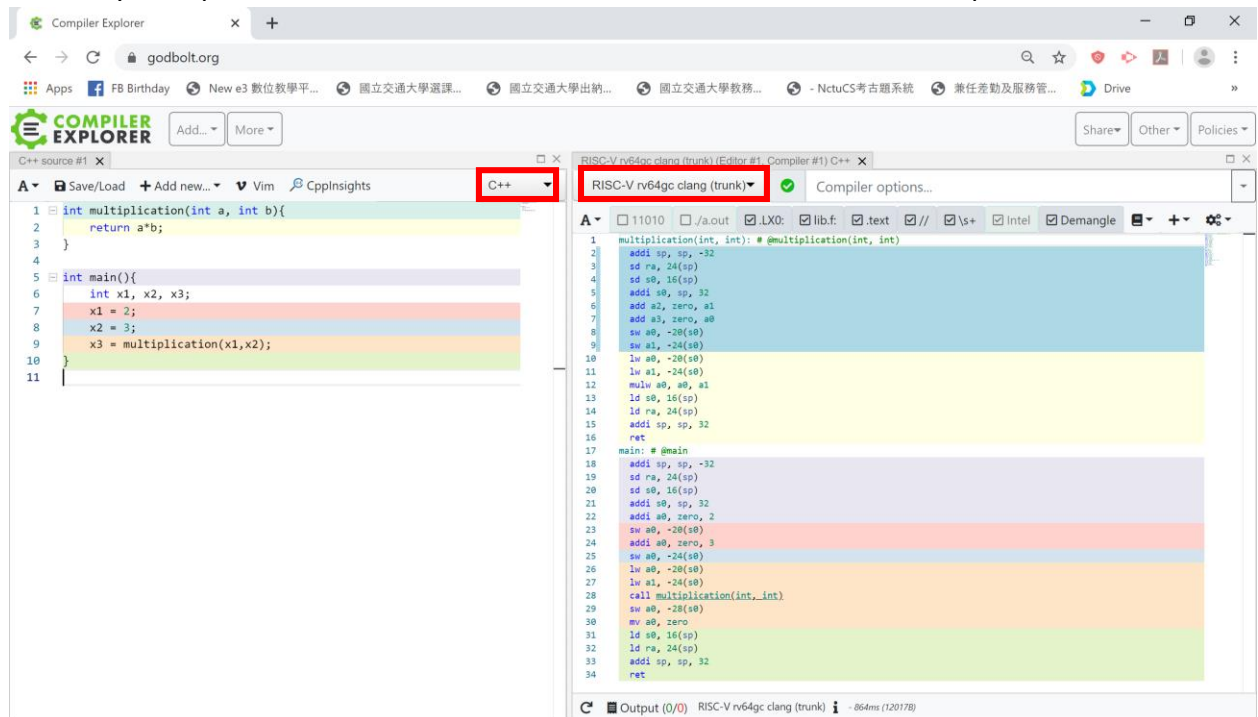Go to library and simulate the system.v file.

Add the wave diagram of clkgen and run for a 800ns then screenshot the result.

Paste the result in the report.

Part 2:

Go to https://godbolt.org/ and convert the multiplication.txt to RISC-V based assembly code. Try to explain what each line of the RISC-V instruction does in the report.

4. Grade

(1) Report(100%)
(2) Late submission: 10 percent penalty per day
(3) No plagiarism, or you will get 0 point.

5. Hand in

(1) Zip your folder and name it as "ID.zip" (e.g. 0816001.zip) before uploading to newe3. Other filenames and formats such as *.rar and *.7z are NOT accepted! Multiple submissions are accepted, and the version with the latest time stamp will be graded.
(2) Please include ONLY your report (*.docx or *.pdf) in the zipped folder.

6. Q&A

For any questions regarding Lab 0, please contact
張祐銘 yumingchang.cs03@g2.nctu.edu.tw
賴柏宏 bhbruce.cs07g@nctu.edu.tw
鄭俊賢 petertay1996.cs08g@nctu.edu.tw