Installing QtSPIM on Your Laptop

Our assembly language programming classes will be interactive, using the QtSPIM assembler and emulator, which students can install on their laptops.

- The most up-to-date version of the SPIM simulator, called "QtSPIM," is maintained by James Larus, formerly of the University of Wisconsin at Madison. It is "freeware," and is maintained on a web site called "SourceForge." There is a new SPIM version, as of August, 2015.
- Go to the SourceForge website: http://sourceforge.net/projects/spimsimulator/files/
- You will see the choice of a number of SPIM downloads. Select: QtSpim_9.1.16_Windows.exe and click on that link for a PC laptop. Note that there are Linux and Mac versions as well. The Mac version used to be very unreliable, but it has improved dramatically.
- Follow instructions below to load onto your computer.
- The download software will ask if you want to open or save. Click "save." Most browsers have a space for "download files," so put it there.
- Once the program is saved in the download file, double click on that program. Note that it is an .exe file, so it will start to install.
- The program will ask to create a folder named "C:/Program Files/QtSpim." It will store SPIM in that file. <u>Note that you will also store all the programs you create in that folder as well</u>.
- When done, the program should tell you that a successful install was accomplished. If so, close the installation window.

- The setup program will also install a QtSpim.exe icon on your desktop so that you can easily start up this version of SPIM.
- Once QtSpim is created, you may open it to see if you get the register and text windows. Note that you have to click on a tab at the top to get the "Data" window. If you can see these windows, then QtSPIM should be correctly installed.
- At this point, you need to run a test program under QtSPIM to be sure that everything is running well. The two programs at the end of this document should be copied into NotePad one at a time and stored as text files in the QtSPIM file folder.
- Now, open QtSPIM and click on the "File" tab at the upper left. Under that, select "Load File."
- Usually the program will default to the correct file, but if not, click on "C" , open "Program Files (x86), and open the QtSPIM folder.
- You may not see the file until you select "Text files" under the type window. Then you should see the two NotePad files you stored. Select the first program (<u>QtSPIM Installation Check Program 1</u>）and it should open in QtSPIM. NOTE: OCCASIONAL PROGRAM LOADS MAY EXPERIENCE AN ERROR MESSAGE AT THIS POINT. IGNORE IT, CLICK "OK," AND THE NOTEPAD FILE SHOULD OPEN.
- Click on the "Simulator" tab and select "Run/continue." The program should run. If it prints out 37835, your installation is complete. Run the other program as a check. It should print out 27608.   If it is successful, you are ready for the assembly language portion of EE 2310.

Notes:

1. I moved my SPIM folder from program files to My Documents. You certainly don't have to do this, but it works fine from that location as well.

2. My experience is that QtSPIM is more difficult to install and run on a MAC, although the last releases are much better. If QtSPIM for Mac does not work for you, I suggest that you either buy, rent or obtain a PC laptop to run SPIM, or that you install a Bootcamp ™ partition on your MAC, and run QtSPIM under Windows ™ in the separate Bootcamp partition.

3. QtSPIM seems to install very well on all desktop PC's. On rare occasions, a laptop install may be unsuccessful, although this is much less frequent with QtSPIM than with previous versions of PCSPIM. If your installation appears successful, open one of the test programs as noted above. As long as the program runs, the installation is good.

4. If you still cannot get a test program to run, it is probably best to delete the program and do the installation over from the start. In general, I have found that laptop installations almost always work on the second try (one students had to reinstall twice).

5. PC laptop installs of QtSPIM are much more reliable than they used to be. I have installed QtSPIM on my laptop twice over the last year as a check, and the installation went perfectly both times. Don't be discouraged if you have problems, as a reinstall should fix the situation. If all else fails, come to see me during office hours.

```
# QtSPIM Installation Check Program 1


        .text
main: li $t0,23
      li $t1,35
      li $t2,47


      mul $t3,$t0,$t1
      mul $t3,$t3,$t2


      move $a0,$t3
      li $v0,1
      syscall
      li $v0,10
      syscall
```

```
# QtSPIM Installation Check Program 2


        .text
main: lw $t0,data1
      lw $t1,data2
      lw $t2,data3


      mul $t3,$t0,$t1
      mul $t3,$t3,$t2


      move $a0,$t3
      li $v0,1
      syscall
      li $v0,10
      syscall


          .data
data1:     .word 17
data2:     .word 29
data3:     .word 56
```