

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 by a web site called “SourceForge.”**
- **Go to the SourceForge website:
<http://sourceforge.net/projects/spimsimulator/files/>**
- **You will see the choice of a number of SPIM downloads. Select: QtSpim_9.1.12_Windows.zip and click on that link. Note that there are Linux and Mac versions as well. The Mac version (now 9.1.13) 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.” If you are using Firefox (which I recommend), simply save it as a Firefox download file.**
- **Once the program is saved in the Firefox file, click on the file. It will open and you will see that there is a “Setup” program. Double click on that program and it will unzip the file and start installation.**
- **The program will ask if you want to save QtSPIM in the Windows folder called “Program Files(x86).” Simply click on “Next” to select that option.**

- The program will then ask if you want to install QtSPIM. Simply click “Next” again and QtSPIM will begin installation.
- The program will store QtSPIM under the same “C:/Program Files/QtSpim” file that the downloaded install program was stored in.
- When done, the program will tell you if a successful install was accomplished. If so, you can close the installation window. You can also close the Firefox downloads file and the SourceForge 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 one 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. 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.
2. 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.
3. 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).
4. 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
```