UCR EE/CS 120B

Lab 0: Intro to C and RIMS (Pre-Departure)

Introduction

Welcome to EE/CS 120B! This lab is designed to ease you into the course material and get everyone on the same footing in regards to their C programing experience.

After this lab, we will assume for the rest of the quarter that you are:
1) proficient in C
2) know how to correctly submit labs following the submission guidelines
3) know how to use RIMS (used for homeworks)

This lab reviews C programming and introduces the RIMS (Riverside-Irvine Microcontroller Simulator) tool for compiling/testing embedded C programs -- part of the RI Tools software package -- which will be used extensively during the quarter. Additionally, it will teach you the submission format for all future lab assignments -- not following these submission guidelines will result in a zero for any given assignment.

Students are encouraged to work in pairs. Don't forget to get your partner's name and contact info!

Part 1

The course eBook, "Programming in C: A Simple Introduction" may be found in the GDrive folder. The second course eBook, "Programming Embedded Systems" (PES), is hosted by Zyante. Please see the course syllabus for information on subscribing (there is a discount code found in the syllabus).

You must subscribe to the Zyante PES book to get your RITools activation code found on the main welcome page after logging in.

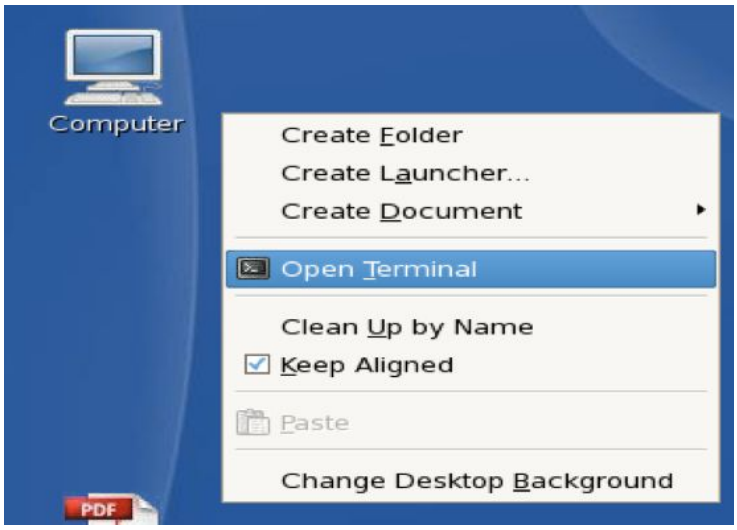
Part 2

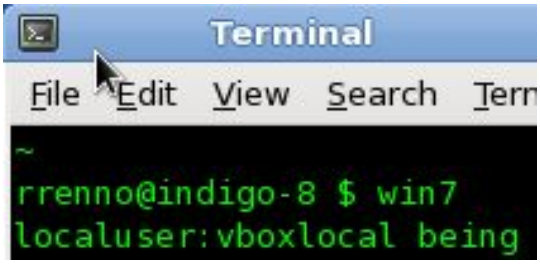
Go read the lab submission guidelines in the GDrive folder. You will be expected to submit files in the correct format.

Part 3

For personal machine (it will be used in homeworthis lab and all subsequent labs we will be working in Windows. You may wish to install RI Tools on your ks) -- this may be found at http://ritools.cs.ucr.edu/.

If you are not using Windows you may use VirtualBox in Lab 136 before we leave for Switzerland. To access VirtualBox, log into to your CS account and open a terminal (right click anywhere on the Desktop) and execute the command ‘win7’ (without the quotes). If you do not have a CS account, please speak to your TA.



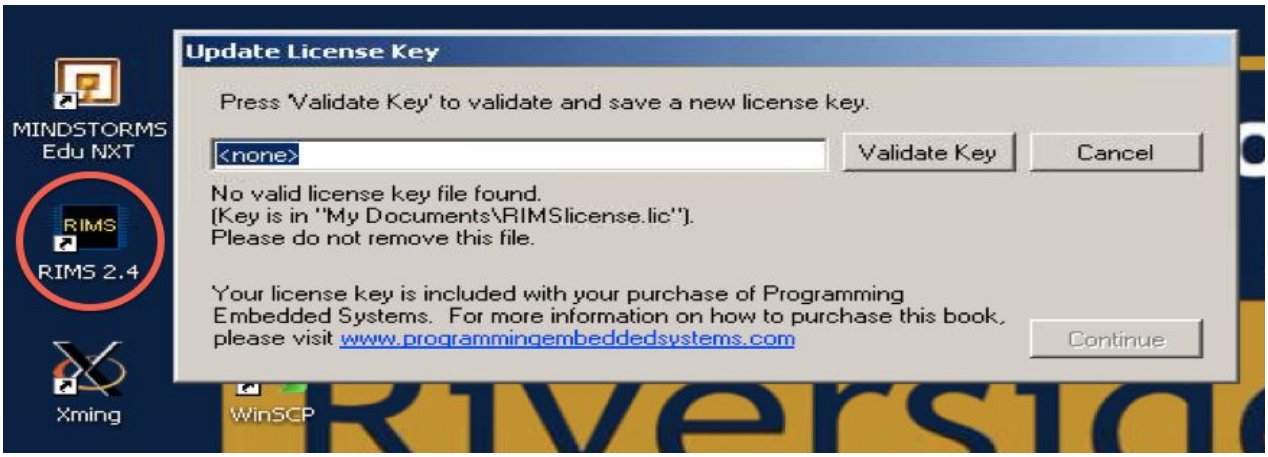


Important: NEVER close VirtualBox by pressing the "X" in the top right corner of the window. Doing so may leave the process running in the background, causing issues. **Instead**, shut down VirtualBox by going to Start > Shutdown from the start menu of Windows.

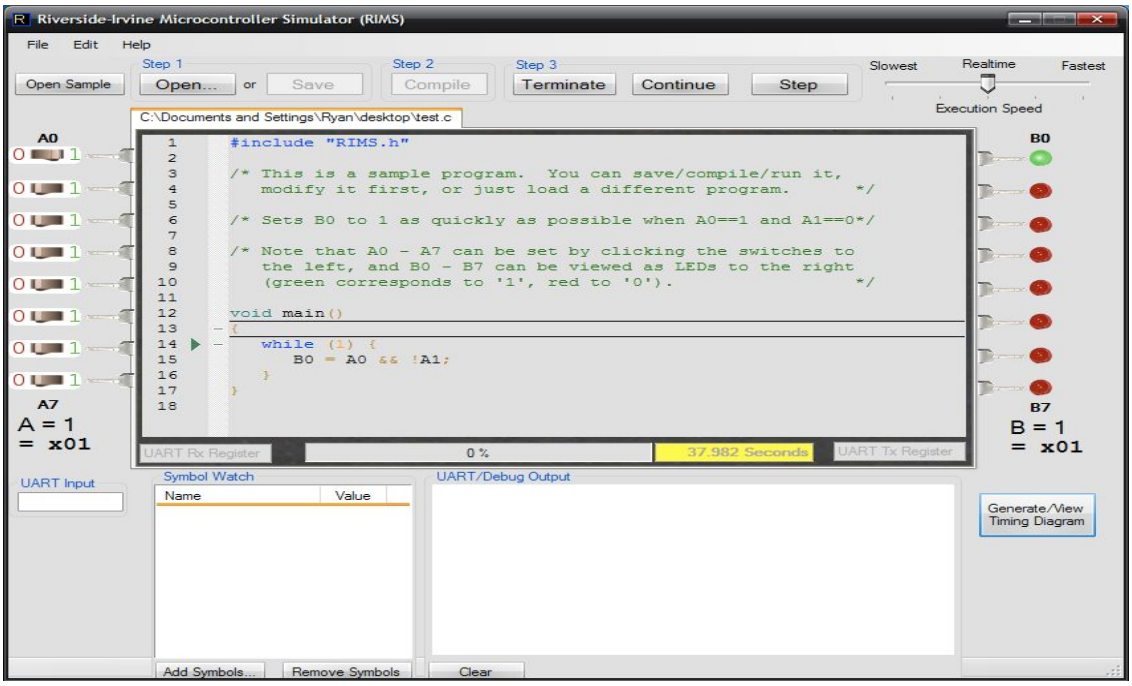
Important: **VirtualBox is a static image and will not save local files when the virtual machine is rebooted, thus causing all of your work to be lost.** It is important to save your work elsewhere. Either to a mapped network drive (your CS home directory), a USB flash drive, GDrive, DropBox, or email your files to yourself. Instructions for how to map a network drive can be found in the Read Me!.txt file on the VirtualBox Windows Desktop.

Note: To exit full screen mode of VirtualBox at any time press (right)ctrl+f on the keyboard.

To Access RIMS unzip the RIToolkit_current.zip and execute the RIMS.exe link. You may wish to visit http://ritools.cs.ucr.edu/ to download a more up to date version. You will need to use the validation key from the Zyante PES site.



You should now be able to begin the lab.



Lab activities

Day 1 objective

- Complete all “Try” activities in the “Programming in C: A Simple Introduction” book.
- Submit 5 “Try” activities on iLearn per the submission guidelines in the GDrive.

For this lab, read through the “Programming in C: A Simple Introduction” book, completing all "Try" activities in the book. To facilitate learning the lab submission guidelines, **select five of the activities for submission**. Be sure to create a unique .c file for each exercise following the naming conventions laid out in the submission guidelines. Don’t forget to place the file’s header comment at the top of each .c file.

Ensure that both you and your partner understand all the principles covered in the book as they will be assumed knowledge in this course. Partners should help one another and alternate for each activity -- partner 1 doing the first activity, partner 2 doing the second activity, partner 1 doing the third, etc. This will be the pattern for all future labs.

You may wish to submit your incomplete lab assignment to iLearn, you can always resubmit later.

Trouble shooting: On occasion RIMS may refuse to compile with no error. Try saving your work and restarting RIMS.

Day 2 objective

- Complete all “Try” activities and both “Exercise” activities in chapter 1 of the “Programming Embedded Systems” (Zyante) eBook.
- Complete all “Try” activities in chapter 2.
- Submit the two activities (one from chp1 and one from chp2) for which you devised the cleanest solution.
    - A clean solution is easy to read, and easy to modify if behavior requirements change.
    - Concatenate your work from Day 1 and submit all activities together per the submission

guidelines (Simply resubmit to the Lab 0 assignment).

Each student must submit their .c source files according to instructions in the lab submission guidelines.