CPSC440 Project (Task 3)

Ning Chen, Ph.D. Prof., Computer Science Department, California State University, Fullerton

Project Title:

Understand the hardware and software that implements the interrupts

Step 3 Task

In Step 3 Task, your group needs to study the interrupt mechanism and perform the following:

1. Visit https://github.com/malvira/libmc1322x/wiki
2. On that page (pointed by the above link), visit "Getting started with libmc1322x" (for your convenience, that link is here: https://github.com/malvira/libmc1322x/wiki/libmc1322x
3. Explore the "Getting Started" page for your enjoyment
4. Visit the link that brings you to the source code of libmc1322x (for your convenience, this link is https://github.com/malvira/libmc1322x)
5. Click the folder "tests" and then "tmr-ints.c" and other related files
6. Explore "tmr-ints.c"

Your group needs to make a ppt (with a separate voice file) presentation (15 to 20 minutes) on the mc1322x hardware and software (libmc1322x) interrupt mechanism.

FAQs:

Q. The "getting started" shows the compilation process in addition to getting the source code for libmc1322x. Do we have to study the compilation process?

A. No. You don't need to study the compilation process (since you don't have the hardware – no way to run the binary code).

Q. So, we just "explore" the source code and try to find something that is related to interrupt?

A. Yes. This is a practice of the "Learning by Thinking" approach.

Q. What will happen if we run "tmr-ints.c" on a real board?

A. You will see a blinking LED.

Q. Is there anything that bothers you in "tmr-ints.c"?

A. Yes. The main function has a while loop as follows:

while (1) { continue; }

Q. Is it possible to “hack” the code (“tmr-ints.c” and other files in libmc1322x) and understand the interrupt mechanism?

A. Yes. “Hacking” actually is the best/fastest way to learn. Trust your common sense and instinct!

Q. Will you provide more hints in class?

A. Yes (don’t miss the class).