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[The Computing Technology Inside Your Smartphone] Overview of week 8

The Computing Technology Inside Your Smartphone <ENGRI1210x-no-reply@courseupdates.edx.org> Tue, Apr 28, 2015 at 2:14 PM
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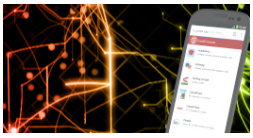

Welcome to the last week of the course! It's hard to believe that we have reached this point already. I've noticed a surge of students these past two weeks making steady progress towards earning a certificate. The course runs until May 12, so there's still time to reach the 60% completion mark and earn yours!

Having covered the performance of the processor core, we'll turn our attention this week outside the core. We'll begin with *caches*, which mitigate the speed gap between our very fast core and the much slower memory that holds our instructions and data. Then we'll discuss *multicore*, the incorporation of multiple cores (with caches) on a chip, and how to overcome the cache coherence problem, a critical multicore design challenge. Finally, we'll cover techniques to hide the long delay of transferring instructions and data from the Flash memory that permanently holds our apps.

Then we'll revisit the Snapdragon 805 SoC and the Krait processor that we introduced at the beginning of the course, including its performance features: pipelining, superscalar, out-of-order execution, SIMD processing, caches, and multicore. You'll be amazed at how much you now understand about this complex processor that's found in many Android smartphones.

Finally, we'll recap what we've learned and designed in the course and talk about next steps that you can take to learn more. Don't miss the many interviews that we've included from experts in the field, covering various aspects of smartphone SoCs, as well as a look to the future.

We've organized a second optional **cache hackathon**. Those who get involved will collectively design a cache and verify its correctness, a big accomplishment! You'll also earn a badge from Cornell for your participation. Note that there's no timeline for the hackathons. Students can step up and take charge at any time, even after the course officially ends.

Whether or not you liked the course, finished everything or never started, I would be grateful if you would fill out a course survey. All feedback is welcome in order to help us improve the course for future offerings.

I have thoroughly enjoyed offering this course, and having the privilege of interacting with many of you on the discussion boards. Our discussions have been fruitful, great fun, and have expanded my knowledge. I hope to meet you again in a future MOOC!

As always, we are here to answer your questions, even those from the first few weeks. Continue to use #SmartphoneMOOC when tweeting about the course.

On behalf of the course staff, good luck and have fun!

Dave

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