



EECS 373

Design of Microprocessor-Based Systems

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Lecture 2: Architecture, Assembly, and ABI

September 9, 2010

R0
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13 (SP)
R14 (LR)
R15 (PC)
xPSR

- Q&A website for class discussion
 - <http://nuclear.eecs.umich.edu>
 - Good for discussion outside of class
 - Strongly encourage you to log issues there
- Actel Eval Boards
 - Yes, you keep them for the term!
 - This is an experiment to see what you do with them
 - Enables students to explore ideas, labs, etc outside class
 - Encourage you to install tool chain and try out Actel tutorials
- Will drop lowest minute quiz (only one)

Recap of the last lecture



- What distinguishes embedded systems?
 - Application-specific
 - Resource-constrained
 - Real-time operations
 - Software runs “forever”
- Technology scaling is driving “embedded everywhere”
 - Microprocessors
 - Memory (RAM and Flash)
 - Imagers and MEMS sensors
 - Energy storage
- Embedded platforms and software
 - How does a phone boot? HW, SW, INT, and drivers
 - What are the components of a DSL modem? 18 major parts
 - Why the ARM architecture? 90%+ of 32-bit embedded CPUs
 - How do ARM licensees differentiate products? Peripherals