

University of Illinois at Urbana-Champaign  
Dept. of Electrical and Computer Engineering

## ECE 220: Computer Systems & Programming

### LC-3 I/O Usage Example

## Task: Print a Number in Binary

Let's write some code with LC-3 I/O registers.

Here's our task:

**Print the value in R0  
as a 16-bit binary number.**

## Identify Information to Track (in Registers)

(Task: print R0 as a 16-bit binary number.)

**What information do we need to track?**

- R0 next bit to print (shift R0 left)
- R1 next bit index to print (15 down to 0)
- R2 next ASCII character to print
- R3 ASCII '0' (x30) for convenience
- R4 a temporary

## First Step: Break the Task into a Sequence of Two

Generally, we need to initialize registers first.

