Introduction to Computer Organization

CSC 225 Hatalsky (slide credit to Christopher Siu)

## The World of Computing

Consider the following lines of Python:

```
def fib(n):
if n == 0 or n == 1:
    return n
else:
    return fib(n - 1) + fib(n - 2)
```

- □ How does a computer interpret these lines?
- □ A computer has no inherent understanding of "def" or "if".
- □ A computer is not a magical electronic genius.
- ☐ A computer does exactly what it's told, nothing more.

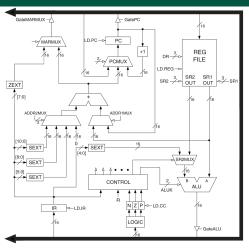
## The World of Computing

High-Level Languages	CPE 123, 101, 202, .	
Compilers and Interpreters	CPE 430, 431	
Assembly Languages	CPE 233	
I/O Interfaces		CSC 225
Instruction Set Architectures	CPE 315	
Organization	CPE 233	
Implementation	CPE 233	
Transistors and Logic	CPE 133	

## Why Learn This Stuff?

- □ Neither hardware nor software alone can make up modern computer systems.
  - You should know both!
- Understanding this stuff will make you a better programmer.
- □ Because we should know. Right?
- ☐ Because it will be useful. Right?

## The LC-3



□ All computers, given enough time and memory, are capable of solving the same problems.