



CMSC 131

Fall 2018

Please put away your laptops



- Sorry... no electronic devices on MWF
- Please DO bring a laptop (if you have one) to the discussion sessions

Announcements / Reminders

1. We need a notetaker
2. CS Survey
3. MCWIC Welcome Event
4. MCWIC Intro. to Computing BootCamp
5. Tutoring is available

Reminder: Class webpage

- Look over all of it (especially syllabus)
- Authentication for “study questions”

Reminder: Install Eclipse

- Instructions on class webpage
- First project (Hello World) has been posted
- If you're stuck, come to office hours

Computer Systems Overview (First Hardware)

- CPU
- RAM (more detail on next slide)
- Secondary Memory devices
- I/O devices

Random Access Memory (RAM)

- What's a bit?
- What's a byte?
- Mental picture (abstraction) of RAM:
- Each cell has an “address”
- How many combinations can be stored in one “cell”?
- More generally, how many combinations can be represented by k bits?

	• • •
7275	10111010
7276	01001011
7277	10110011
7278	11110011
7279	00011101
7280	11010001
7281	01010110
7282	10010011
7283	10110110
	• • •

Units of Storage Capacity

- kilobyte
- megabyte
- gigabyte
- terabyte

How are basic “atoms” of data stored?

- Whole numbers?
- Floating point numbers?
- “text”

Computer Systems Overview (Software)

- Applications
- Operating system
 - Process management
 - Memory management
 - Primitive I/O
 - Windowing
 - Network control
 - Security

Programming Languages

- What is “Machine Language”?

Example:

10000011 10100000 01100100

“Add the value 100 to register EAX”

- What is “Assembly Language”?

Example:

ADD EAX, 100

Higher Level Programming Languages

Some “historically interesting” languages:

- Fortran
- Cobol
- Lisp
- Pascal
- C
- C++
- Java
- Python
- Ruby