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?
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