**Computer Basics**

**Hardware and Memory**

* Most modern computers have similar components including
  + Input devices (keyboard, mouse, etc.)
  + Output devices (display screen, printer, etc.)
  + A processor

**Main Memory**

* Working memory used to store
  + The current program
  + The data the program is using
  + The results of intermediate calculations
* Usually measured in megabytes (e.g. 8 gigabytes of RAM)
  + RAM is short for random access memory
  + A byte is a quantity of memory

**Auxiliary Memory**

* Also called secondary memory
* Disk drives, CDs, DVDs, flash drives, etc.
* More or less permanent (nonvolatile)
* Usually measures in gigabytes (e.g. 50 gigabyte hard drive)

**Bits, Bytes, and Addresses**

* A bit is a digit with a value of either 0 or 1.
* A byte consists of 8 bits.
* Each byte in main memory resides at a numbered location called its address.

**Files**

* Large groups of bytes in auxiliary memory called files.
* Files have names.
* Files are organized into groups called directories or folders.
* Java programs are stored in files
* Program files are copied from auxiliary memory

**Programs**

* A program is a set of instructions for a computer to follow.
* We use programs almost daily (email, word processors, video games, bank ATMs, etc.).
* Following the instructions is called running/executing the program.

**Compiling and Running**

* A Java program can involve any number of classes.
* The class to run will contain the words

public static void main(String[] args)

**Printing to the Screen**

System.out.println (“Whatever you want to print”)

**Programming Languages**

* High-level languages are relatively easy to use
  + Java, C#, C++, Visual Basic, Python, Ruby.
* Unfortunately, computer hardware does not understand high-level languages.
  + Therefore, a high-level language program must be translated into a low-level language