Day 3 Highlights

1. Reminders
   1. Make sure you understand the topics covered in previous lectures
   2. Make sure you have signed up for Piazza
   3. Quiz 1 (tracing) Friday, practice quiz posted today on Piazza
   4. zyBooks exercises (chapters 1&2) due Friday at midnight (11:59pm)
   5. Project 1 will be assigned Friday (due in a week at 5:00pm)
2. A couple of comments on compiling
   1. **gcc –Wall filename** option
   2. **gcc filename –o xxx** option
3. Five binary arithmetic operators
   1. **+ - \* / %**
   2. Integer division and modulo or simply mod operators **/ %, quotient and remainder,** please see <http://www.math-only-math.com/dividend-divisor-quotient-and-remainder.html> make sure you understand things like **7 / 2** and **7 % 2** and **123 / 100** and **123 / 10** and **123 % 100** and **123 % 10**
4. Assignment statements with int(integers) and double(real numbers)
   1. Assignment: variable**=**expression**;**
   2. Examples:

* int i, a, b, c; double x, y, z;
* i=1;
* a=i;
* y=a\*x\*x+b\*x+c;
* y=(a\*x+b)\*x+c;
* z=a+b+c/3;
* z=(a+b+c)/3;
* i=i+1;
  1. How to declare a variable
  2. How to write an expression: a variable and a constant are expression; If A and B are expression, so is A op B. op can be **+ - \* / %**, and**()**can be used to increase the precedence.
  3. How an assignment statement is executed
  4. A variable has a type, a constant has a type and an expression has a type too.
  5. Type conversion.
* int a=2, b=3, c=6;
* double z=(a+b+c)/3;
* double z=(a+b+c)/3.0;
* double z=((double)a+b+c)/3;
* double y=0.2\*c+1/5\*c+c/5+c/5.0+(double)c/5;
* double x=3.6;
* int i=x;
* int i=floor(x);
* int i=ceil(x);
* int i=round(x);
* double y=(int)x;

1. Reading values

**int a; double b;**

**scanf("%d", &a); scanf("%lf", &b);**

When reading values, always prompt the user (tell the user what to enter) prior to the actual “scanf” statement

1. Printing values

**int a=3;**

**double b=4.5;**

**printf("a is %d, \tb is %lf\n", a/2, 3\*b);**