**My Notes for Week 04:(Tuesday)**

1) Move people into their GROUPS (have group list available)

2) Quiz

3) During quiz, hand back lab

**Computer math:**

On Laptop:

.1 <ret>

.1+.1<ret>

.1+.1-.2 <ret>

.1+.1+.1-.3 <ret> - 5.5511e-17!

- Computer math works on computer numbers

- Computer numbers: each number has to fit into a finite nuimber of bits:

e.g. for unsigned integers: \_ \_ \_ \_ \_ \_ \_ \_ each has 0 or 1, so we have 2\*2\*...=2^8 = 256 possible numbers.

x=uint8(34); y=uint8(50)

x+y OK

x-y <- 0!

x=uint8(240)

x+y <- 255.

>> help datatypes

Notice all the kinds of different integers – uint and int (with a sign)...also logical....also “single” and “double”.

Double precision floating point:

Numbers re represented more or less as +/-(1+f) x2^e (sign, mantissa, 0<=f<1, exponent) so there are

still a finite number of patterns (numbers), spread unevenly throughout the real number line

LARGEST NUMBER realmax

realmax\*2 -> Inf

SMALLEST realmin (Note, not for class – realmin/2 is not zero, there are so-called 'denormalized numbers represented as (f)x2^e the handle underflows.

So...long decimal numbers are represented by the NEAREST number. But this means

sqrt(2)\*sqrt(2)-2 ~= 0!!!

and .1+.1+.1 ~= .3!

Other stuff: what is the smallest number you can add to 1 to get >1? eps

Special numbers: 1/0 -> Inf

What is 0/0? -> NaN! “Not-a-Number”.

WorkSheet

After doing part 1, perhaps do

>>help precendence