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Do you have any questions about the assignment?

Do you have any questions about the reading? Note that you probably should be doing the reading because I can't cover everything in full detail during lecture.
There are many situations in scientific computing when we want to have random numbers.

In biology an example would be modeling mutations.

In general models will use random sequences for elements that occur at a lower level than the model deals with. So instead of doing a detailed model of that process you do intelligent random selections. This often means using different types of random distributions.
Perl Subroutines

- srand – seeds the random number generator
- rand – gets a random number
- Other helpful subroutines
  - scalar - evaluates something in a scalar context.
  - int - casts a value to an int.
- Remember parentheses can be optional.
- The book runs through an example of code that takes a DNA sequence and randomly mutates it by picking random positions and substituting random bases into those positions.
- This uses a four argument version of substr that substitutes in for a segment of the original string.
The third standard data type (in addition to scalar and array) in Perl is the hash.

A hash is much like an array except that it isn't indexed by an integer, it is indexed by a string. They are sometimes called associative arrays.

The full hash variable is preceded with a %. Use {} to index from it. When indexing you put a $ in front because you are pulling out a scalar.

Hashes can be initialized as a list where consecutive elements are key/value pairs. The => symbol can replace commas between key and value.
Let's play with hashes some to see how they work.
Assignments #6 is due today.