

Testing Random Numbers

3/16/2009

Opening Discussion

- What did we talk about in our last class?

Validating a Random Number Generator

- You should verify the quality of your random number generator.
- This can be done either empirically or theoretically.
- Empirical tests work on generated sequences.
- Theoretical tests require that you know something about the generator.

Empirical Tests

- You can do a chi-squared test on the generated values.
- This can be extended to the serial test where the test is done in higher dimensions.
 - This tests correlation of values.
- Runs test for correlation.
- Correlation between U_i and U_{i+j} .
- All of these are local.

Theoretical Tests

- These require more advanced math and knowing the details of the generator.

Greenfoot and Greeps

- At the conference there was a competition in Greenfoot that was basically a multi-agent simulation construction project.
- Let's take a look at it.

Disney Simulation

- I spent last week in Disney World. There are all types of things to simulate there.
- I want to spend some time talking about how we might do that.

Minute Essay

- Would you want to be a simulation expert working for Disney?