



MATLAB Simulations & Randomness

Week 10



Simulation

- A simulation is a computer program written to mimic a “real-life” situation based on chance.
- Each independent event in a simulation requires one random number

Seeding Random Numbers

- We've seen how to generate random numbers
 - `rand(n)` or `rand(n,m)`
- `rand()` defaults to uniformly distributed values
- While an instance is open, `rand` will provide random numbers
- Restarting MATLAB will allow for the same sequence of numbers
- `rand()` can be initially *seeded* each time you start MATLAB

Seeding Random Numbers

- The function can be seeded with the following statement
 - `rand('state', n)`
- Where n is any integer
- n is set to 0 by default upon startup
- Useful if you want to repeat the same random numbers (debugging)

Seeding Random Numbers

- Seeding with the clock is a common way to seed random number generators
- To do so with MATLAB use
 - `rand('state', sum(100*clock))`

Exercise - Seeding

- Set the `rand()` seed (state) to zero
 - Execute `rand(1)` (You can try this a few times)
 - Now set the `rand()` seed to zero again
 - Execute `rand(1)` as you did previously
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- You should notice you get the same random values after reseeding