Experiment – 100 random coin flips (unbiased)

Unbiased data taken by pseudo random number generators..

Rand function

**The main point is that, if I done only one trail and assumed that it was the answer to the question that the coin is biased or not. I may have fooled myself.**

Code







Percentage difference by heads and tails

1000 coin flips

Percentage difference is lower but the difference in absolute terms id going to be larger.

**By flipping more coins, experiment becomes more reproducible. The range is more narrower. Each experiment tends to give an answer that is closer to all the other experiments.**

**It should give you confidence….**

**It’s a kind of easy to think abt running a simulation to predict the future .. so in some sense we look at this n it predict what might happen if we flip a 1000 coins…**

**Helps to predict what might happen …**

**We not always use simulations to predict the future, We also use simulations to understand the current state of the world.**

**Guessing the value of the current state of the world, when we don’t have data available. So its similar to guessing the future ..**

**In general when we try to predict the future or to guess the present, we have to use the information that we already have. To do that we have to ask a question that is the past behaviour a good pridiction of the future behaviour.**

**IS THIS TRUE**

**Inferrential statastics –** **random sample tends to exhibit same properties as the population from which it is drawn.**

**Simulations can get you to closer very easily but to get the answer more precise we have do a lot f work…**

**If we get same answer after a lot of experiments, we can confer that we have the right answer statistically…**

* **ASK IF THE ANSWER MAKES SENSE …**
* **YOU CAN GET ALL YOU STATISTICS RIGHT AND STILL GET A WRONG ANSWER…**
* **ASK IS IT CONSISTENT WITH OTHER EVIDENCE..**
* **SYSTEMATIC ABOUT DEBUGGING, IN A SINGLE EXAMPLE.**

**Result**





**Estimation the value of pi..**

**Code**



Results





Random walk ,… without monti carlo





500 trials

20.5264

20.1582

21.3877

20.1603

20.7621

21.2915

19.8661

19.4860

1000 trails



20.0901

19.8707

20.1146

20.2806

19.2497

19.7505

20.2748

20.7393