

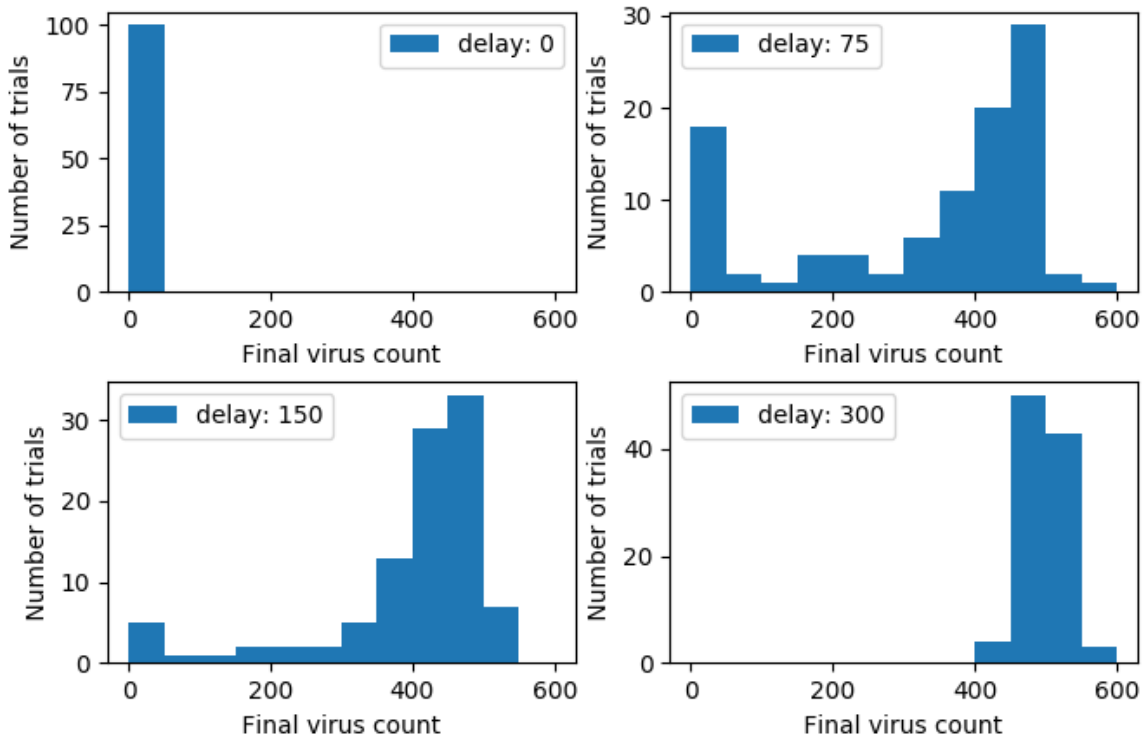
Problem 2:

What trends do you observe?

After 100 steps, growing stops and after taking drug, virus population quickly decreases but after 50 steps after drug when growing stopped, population starts to increase again.

Are the trends consistent with your intuition?

Yes, they are.



Problem 3:

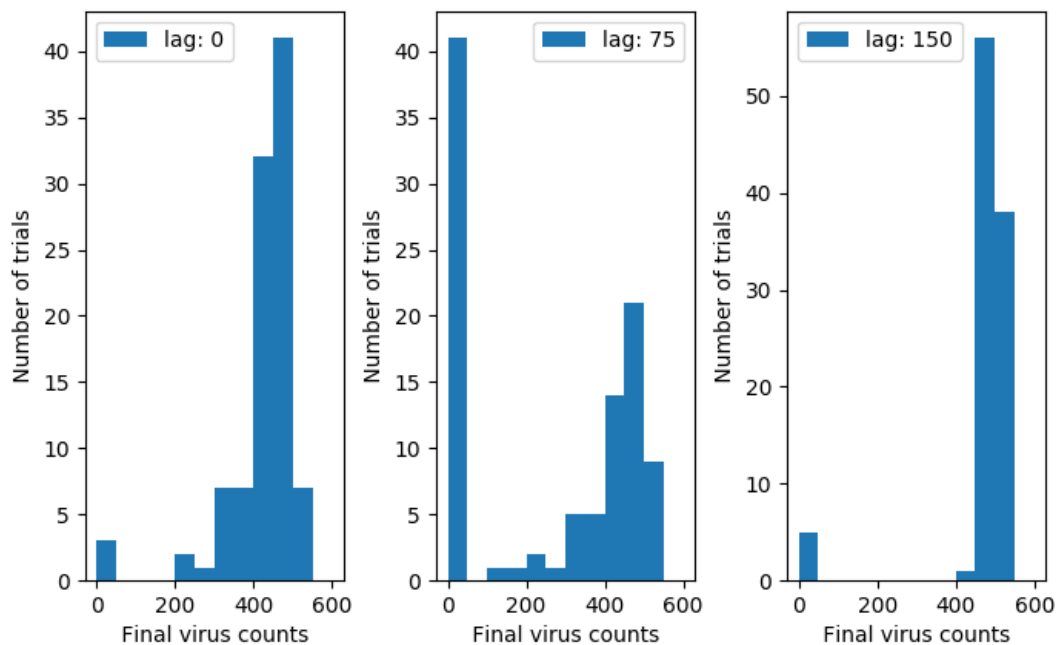
100 Trials are enough, without definitive cases, curve doesn't change much.

If you consider final virus particle counts of 0-50 to be cured (or in remission), what percentage of patients were cured (or in remission) at the end of the simulation?

Regarding the first simulation data I plotted, for 50 virus particles it is 100% too.

What is the relationship between the number of patients cured (or in remission) and the delay in treatment?

The more delay is, the less is curing chance. In the model presented, the more delay is, cured patients are becoming less, after some point reaches 0%.

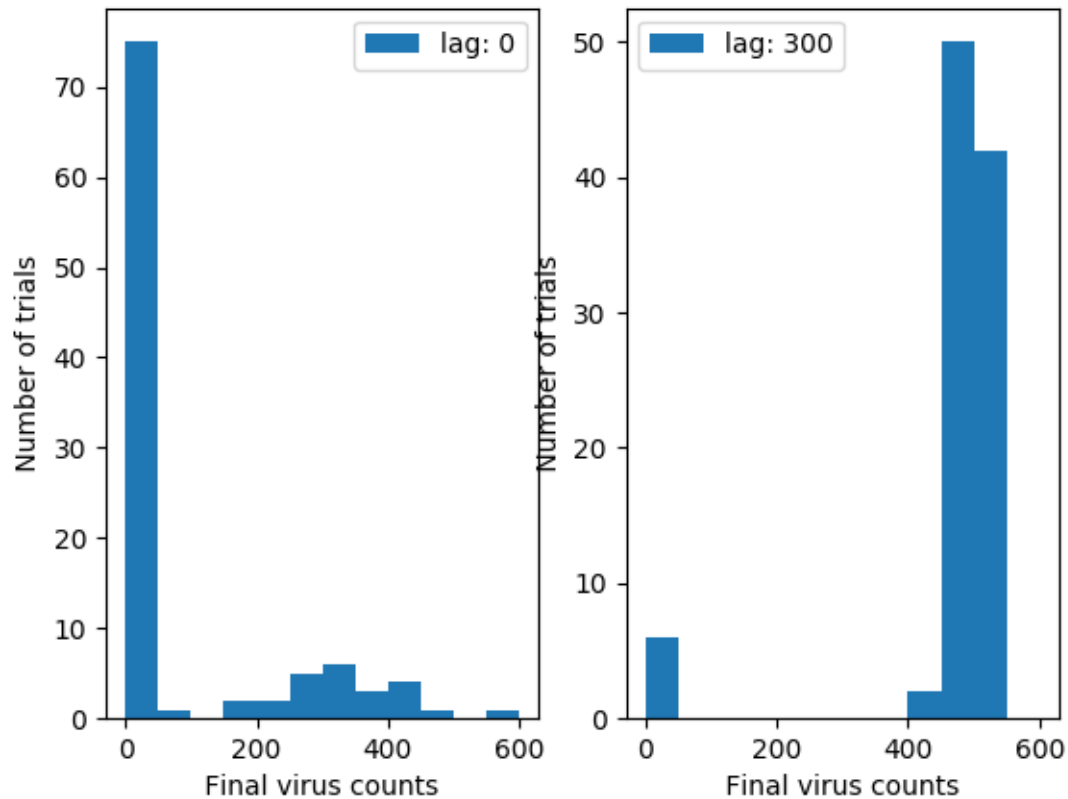


Problem 4:

What percentage of patients were cured (or in remission) at the end of the simulation?
 For optimal situation, lag=75, approximately 40% cured.

What is the relationship between the number of patients cured (or in remission) and the time between administering the two drugs?

If two drugs given together or lagged too much patient isn't likely to survive. Optimal lag is between initially and late, immediately after population starts to growing.



Problem 5:

Regarding previous graph, data shows immediately or too late second drug prescription lowers chance of cure. With current graph we know, in this situations, giving second drug immediately is better than later.

If time arises between two drug administration, curing chance roughly lowers.

Problem 6:

I would model with new instance of forgetfulness with a float in Patient class between 0 to 1 and a instance between 0 to 1 that shows drug percentage in blood.

Every update, if patient forgot taking drugs, viruses would reproduce with this drug percentage in blood, with probability. Every update, drug percentage would decrease a certain amount. It can be a fixed instance for every drug or special argument can be taken while adding prescription to patient.

