Problem 3

1/1 point (ungraded)

In this problem, we consider the effects of both administering drugs to the patient and the ability of virus particle offsprings to inherit or mutate genetic traits that confer drug resistance. As the virus population reproduces, mutations will occur in the virus offspring, adding genetic diversity to the virus population. Some virus particles gain favorable mutations that confer resistance to drugs.

ResistantVirus class

In order to model this effect, we introduce a subclass of `SimpleVirus` called `ResistantVirus`. `ResistantVirus` maintains the state of a virus particle's drug resistances, and accounts for the inheritance of drug resistance traits to offspring. Implement the `ResistantVirus` class.

Hint: `reproduce` function child resistances

If you are really unsure about how to think about what each child resistances should be changed to, here is a different approach. If the probability `mutProb` is successful, the child resistance switches. Otherwise, the child resistance stays the same as the parent resistance.

If you want to use numpy arrays, you should `import numpy as np` and use `np.METHOD_NAME` in your code.

```
# Enter your definition for the ResistantVirus class in this box.
# You'll enter your code for TreatedPatient on the next page.
# Part B: Problem 3
#  Bookmark this page
# Part B: Problem 3: Implementing a Simulation With Drugs
# 10.0/10.0 points (graded)
# In this problem, we consider the effects of both administering drugs to the patient and the ability of virus particle off
# inherit or mutate genetic traits that confer drug resistance. As the virus population reproduces, mutations will occur in
# offspring, adding genetic diversity to the virus population. Some virus particles gain favorable mutations that confer re
# drugs.

# ResistantVirus class
# In order to model this effect, we introduce a subclass of SimpleVirus called ResistantVirus. ResistantVirus maintains the
# virus particle's drug resistances, and accounts for the inheritance of drug resistance traits to offspring. Implement the

```

Press ESC then TAB or click outside of the code editor to exit

Correct

Test results

See full output

CORRECT

See full output

Submit You have used 1 of 30 attempts

✔ Correct (1/1 point)

Problem Set 3: Problem 3

Hide Discussion

Topic: Sandbox / Problem Set 3: Problem 3

Show all posts by recent activity

There are no posts in this topic yet.