Errata for
Introduction to Computation and
Programming Using Python
(Spring 2013)
by John Guttag

Content related:

Multiple places: The print function of Python 3 is used rather than the print command of Python 2. The code is correct as is, by stylistically inconsistent with the code elsewhere in the book. The pages where this kind of error occurs are 80, 84, 85, 152, 238, 254, 262

p 8: Should say Guido van Rossum"

p.26, Last full paragraph should start with, "What about the decimal fraction 1/10, which we write in Python as 0.1? The best we can do with four significant digits is (0011, -101). This is equivalent to 3/32.0, i.e., 0.09375."

p. 63, Figure 5.5. should say `applyToEach(factR)` rather than `applyToEach(fact)`

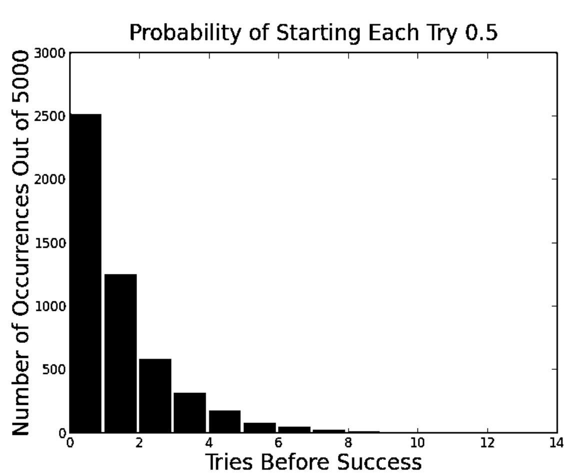
p 170: The code in Figure 12.11 should be:

```
def successfulStarts(eventProb, numTrials):
    timesToSuccess = []
    for t in range(numTrials):
        consecFailures = 0.0
        while random.random() > eventProb:
            consecFailures += 1
        timesToSuccess.append(consecFailures)
    return timesToSuccess

probOfSuccess = 0.5
numTrials = 5000
distribution = successfulStarts(probOfSuccess, numTrials)
pylab.hist(distribution, bins = 14)
pylab.xlabel('Tries Before Success')
pylab.ylabel('Number of Occurrences Out of ' + str(numTrials))
pylab.title('Probability of Starting Each Try ' + str(probOfSuccess))
```

and the text and figure related to the code should be:

The **geometric distribution** is the discrete analog of the exponential distribution. It is usually thought of as describing the number of independent attempts required to achieve a first success (or a first failure). Imagine, for example, that you have a crummy car that only starts half of the time you turn the key. A geometric distribution could be used to characterize the expected number of times you would have to



attempt to start the car before being successful. This is illustrated by the historgram on the right, which was produced by the code in **Error! Reference source not found.** The histogram implies that most of the time you'll get the care going within a few attempts. On the other the long tail suggests that on occasion you may run the risk of draining your battery before the car gets going.

P 192: The text preceding figure 14.1 should read,

Most of the early work on probability theory revolved around games using dice.[1] Reputedly, Pascal's interest in the field that came to be known as probability theory began when a friend asked him whether or not it would be profitable to bet that within twenty-four rolls of a pair of dice he would roll a double six. This was considered a hard problem in the mid-seventeenth century (Pascal and Fermat, two pretty smart guys, exchanged a number of letters about how to resolve the issue.), but it now seems like an easy question to answer:

- On the first roll the probability of rolling a six on each die is 1/6, so the probability of rolling a six with both dice is 1/36.
- Therefore, the probability of not rolling a double six on the first roll is $1 - 1/36 = 35/36$.

Therefore the probability of not rolling a double six twenty-four consecutive times is $(35/36)^{24}$, nearly 0.51. That is to say, in the long run it would not be profitable to bet on rolling a double six within twenty-four rolls.

[1] Archeological excavations suggest that dice are the human race's oldest gambling implement. The oldest known "modern" six-sided die dates to about 600BC, but Egyptian tombs dating to two millennia before the birth of Christ contain artifacts resembling dice. Typically, these early dice were made from animal bones; in gambling circles people still use the phrase "rolling the bones."