

Empire State Building Game



The goal is to walk up the Empire State Building.

To make it more interesting, you are going to make a bet with your friend that you can reach the 60th step of the building rolling a dice 100 times and letting it decide the amount of steps you take.

The dice roll numbers are as follows:

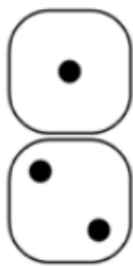
- 1 or 2: Take a step down
- 3, 4, or 5: Take a step up
- 6: Roll the dice again and take the number of steps shown on the dice

The additional rules:

- You can't go below step 0
- You have a 0.5% chance of being clumsy and falling down the stairs

What is the probability you'll be able to reach step 60 or higher?

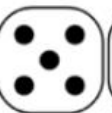
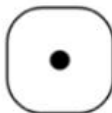
Result: Roughly 77% chance you'll win; the odds are good.



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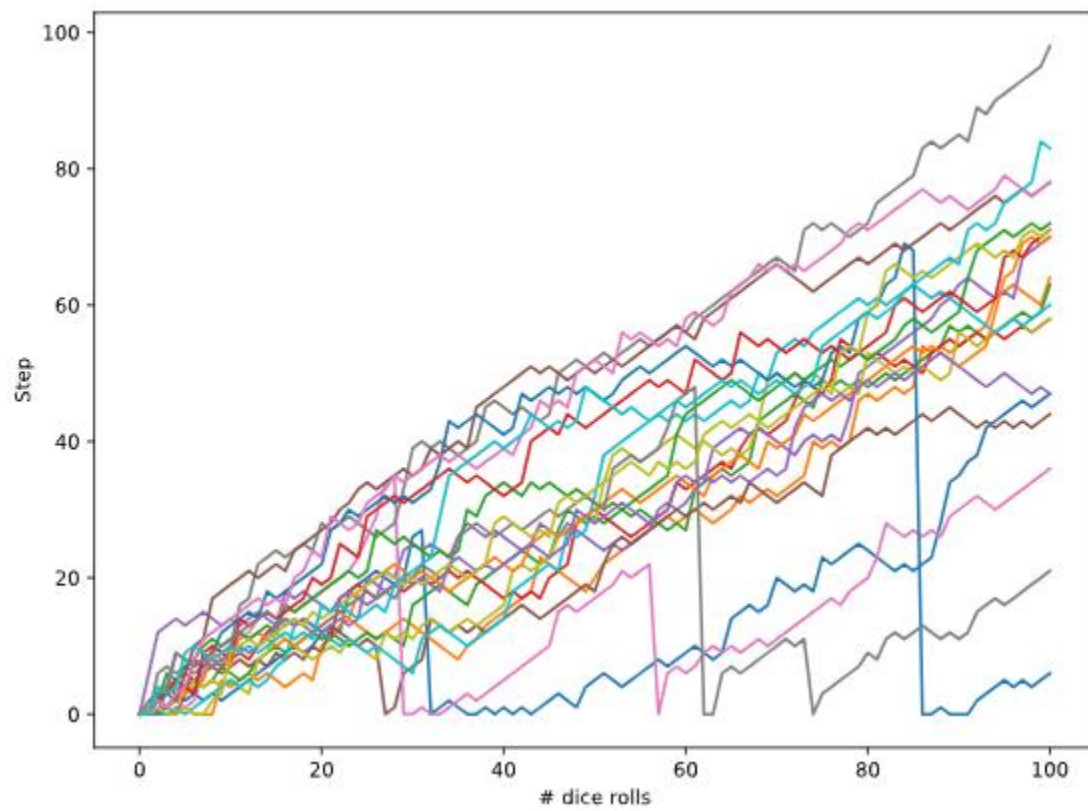


+1

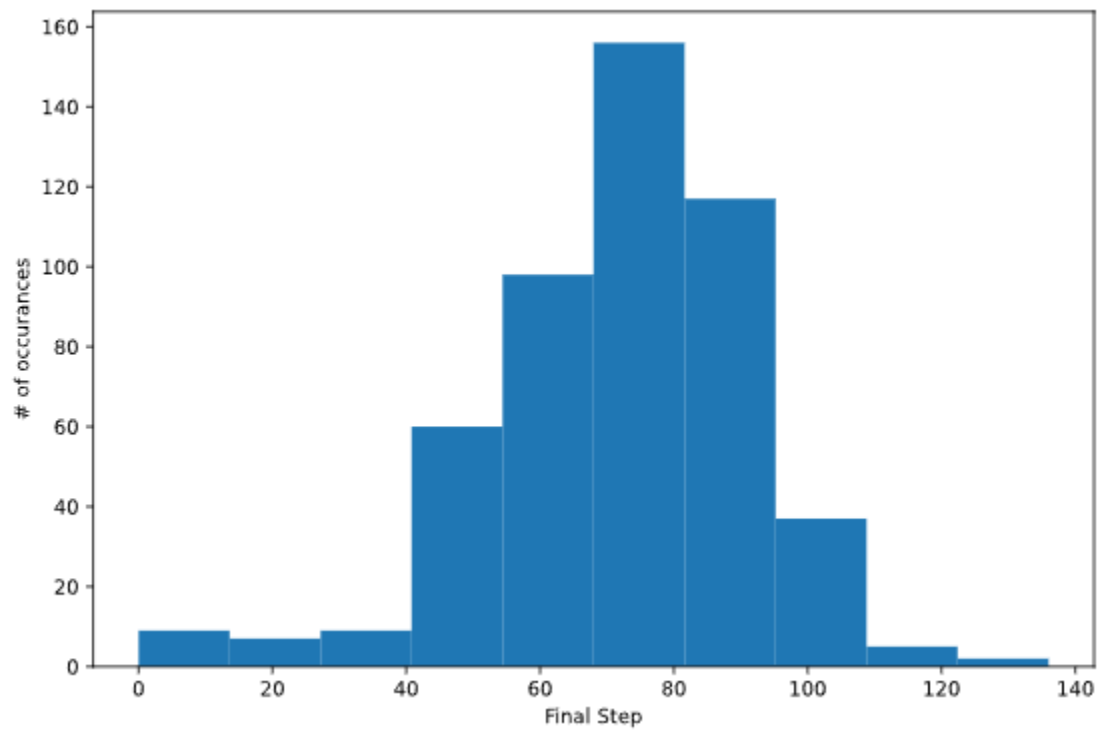


+1 +2 +3 +4 +5 +6

Visualization of steps playing the dice game 20 times



Histogram of which steps the players ended on



Output:

Over 60: 387

Percentage: 0.774