M4-07: Properties of Distributions in Python: CDF and PPF

Part of the "Simulation and Distributions" Learning Badge

Video Walkthrough: *https://discovery.cs.illinois.edu/m4-07/*

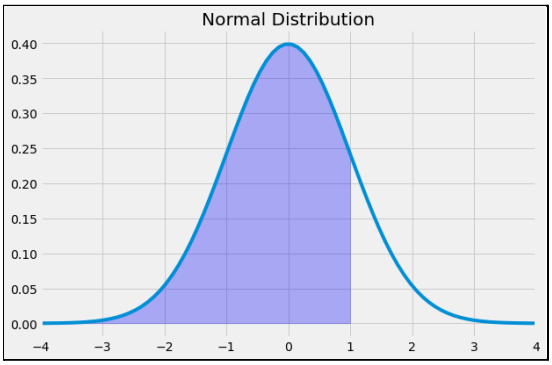
Distributions in Python

The scipy library provides access to many different distributions in Python, including the normal distribution. Accessing the distribution requires importing a library:

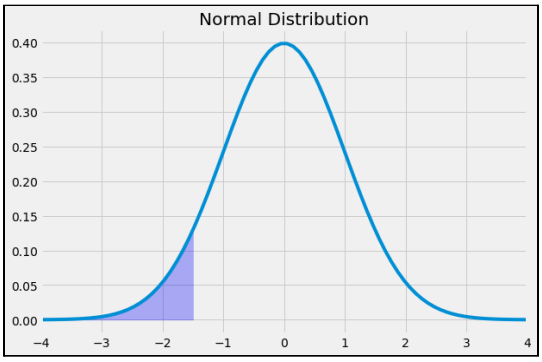
Python:	`from scipy.stats import norm`
Description:	

Puzzle #1: Find the area to the left of various Z-scores on a normal curve:

(a):

Area to the left of: `Z = 1`	`# Python Code:`
	
	`# Result:`
		

(b):

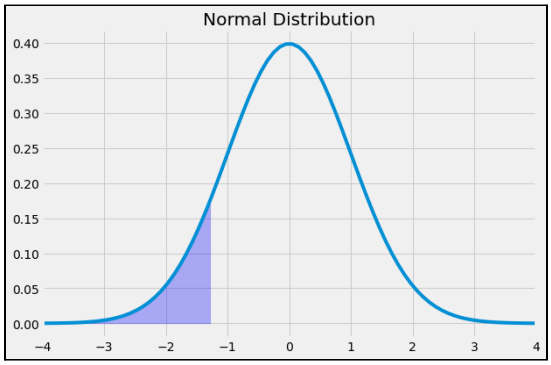
Area to the left of: `Z = -1.5`	`# Python Code:`
	
	`# Result:`
		

(c):

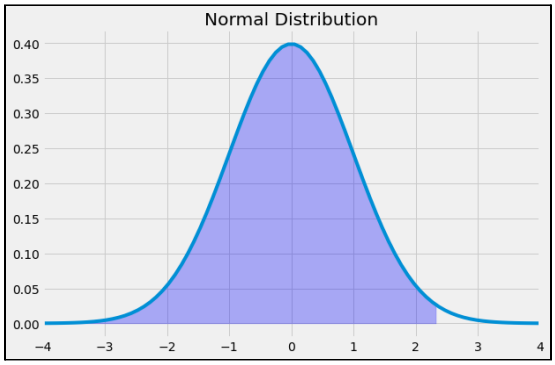
Area to the left of: `Z = 0`	`# Python Code:`
	
	`# Result:`
		What sharing do we expect for Z=0?

Puzzle #2: Find the Z-score for a given a specific shared area to the left:

(a):

Shaded Left Area: **10%**	`# Python Code:`
	
	 `# Result:`
		

(b):

Shaded Left Area: **99%**	`# Python Code:`
	
	 `# Result:`
		

(c):

Shaded Left Area: **150%**	`# Python Code:`
	
	 `# Result:`
		Why do we receive the result?

Puzzle #3: What percentage area is shared between Z=1 and Z=2?

Puzzle #4: What percentage area is to the **right** of Z=0.107?