

Importing Modules

Python comes with an extensive library of built-in modules that make it easy to accomplish everyday tasks. With just a few lines of code, you can do anything from generating random numbers and drawing graphics to sending emails and accessing websites.

Content Learning Objectives

After completing this activity, students should be able to:

- Use the **random** module to generate random float and integer sequences.

Process Skill Goals

During this activity, students should make progress toward:

- Navigating the Python standard library documentation. (Information Processing)

Part 1: Random Numbers

You can generate a sequence of numbers using the Python **random** module. A mathematical function is used to produce the sequence based on a **seed** value. (If no seed is given, the current system time is used) The sequence is more accurately described as **pseudorandom**, since its output is inherently predictable.

In a Python Shell, run the code in the table and write the output.

| Python Code | Shell Output |
|----------------------------|--------------|
| import randint | |
| import random | |
| randint(1,10) | |
| random.randint(1,10) | |
| from random import randint | |
| randint(1,10) | |
| seed(100) | |
| random.seed(100) | |
| random.random() | |
| random.random() | |
| random.seed(100) | |
| random.random() | |
| random.random() | |

Questions

1. What is the name of the module that must be imported before generating a random number?
2. What are the names of the three functions defined in the **random** module?

3. Identify the syntax of the statement to import:

a) a module

b) a function

4. Identify the syntax of a function call assuming:

a) the module was imported

b) the function was imported

5. How could you eliminate the need for typing the word "random" twice (in a function call) to generate a random number?

6. What is the effect on the random numbers generated after calling the **seed** method?

7. Run **random.random()** multiple times. Based on the results, describe:

a) the range of numbers returned by the **random** function

b) the nature of the distribution generated. (Is the distribution clustered or spread out)

8. Run **random.randint(1,10)** multiple times. Based on the results, describe:

a) the range of numbers returned by the **randint** function

b) the nature of the distribution of numbers generated. (Is the distribution clustered or spread out)