

The Python Programming Language

By

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About Python

- Guido van Rossum (Figure 1-26) is the creator of the Python programming language, first released in the early 1990s.
- Its name comes from a 1970s British comedy sketch television show called *Monty Python's Flying Circus*.



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Python 3.8.0 (default, Nov 14 2019, 22:29:45)
C 5.4.0 20160609] on linux
e "help", "copyright", "credits" or "license" for more information.

print("hello world")
hello world
2+3

n=10
m=20
sum=n+m
print(sum)

█

Online console from [PythonAnywhere](#)

Python is a programming language that lets you work quickly
and integrate systems more effectively. >>> [Learn More](#)

The IDLE environmentPython Development Environment

- IDLE is an **integrated development (IDE)**.
- An IDE is a bundled set of software tool for program development
- An **editor** for creating and modifying programs,
- **A translator** for executing programs
- **A debugger** provides a means of taking control of the execution of a program to aid in finding program errors.
- Python is most commonly translated by use of an **interpreter**.
- The window that provides this interaction is referred to as the **Python shell** .

Python Shell

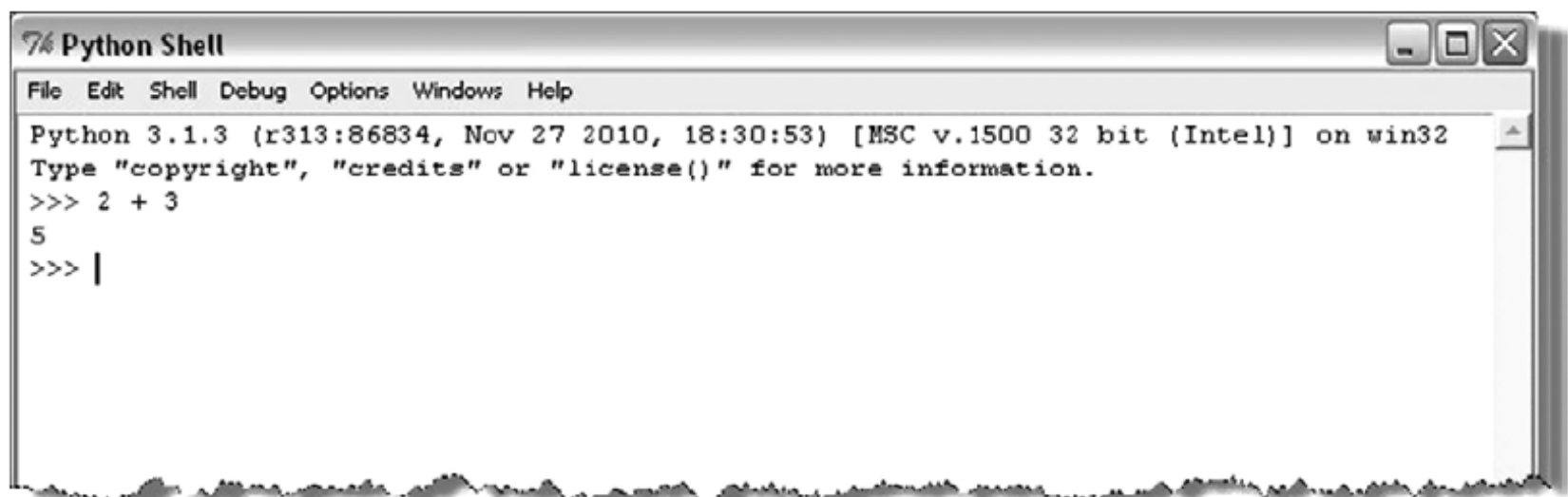
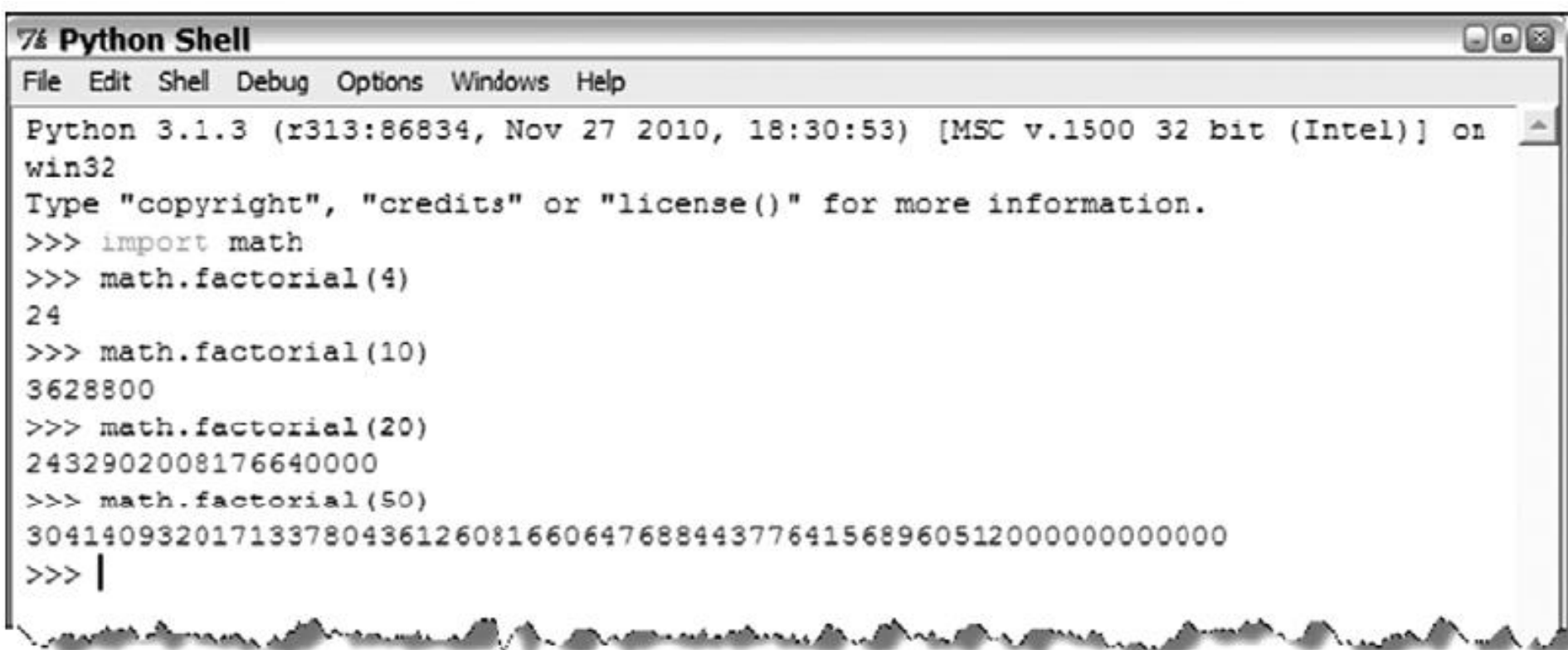


FIGURE 1-27 Python Shell

Here, the expression `2 + 3` is entered at the **shell prompt** (`>>>`), which immediately responds with the result 5.

The Python Standard Library

- The Python Standard Library is a collection of *built-in modules*, each providing *specific functionality* beyond what is included in the “core” part of Python.

A screenshot of a Python Shell window titled "Python Shell". The window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Windows", and "Help". The main text area shows the following content:

```
Python 3.1.3 (r313:86834, Nov 27 2010, 18:30:53) [MSC v.1500 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> import math
>>> math.factorial(4)
24
>>> math.factorial(10)
3628800
>>> math.factorial(20)
2432902008176640000
>>> math.factorial(50)
304140932017133780436126081660647688443776415689605120000000000000
>>> |
```

FIGURE 1-28 Using an import statement

A Bit of Python

- Variables
- Some Basic Arithmetic Operators

Variables

- A simple description of a variable is “a name that is assigned to a value,”

Ex: $n = 5$ variable ; n is assigned the value 5

1. $n + 20$; $(5 + 20)$
2. $n = 10$; $n + 20$; $(10 + 20)$

Some Basic Arithmetic Operators

- The common arithmetic operators in Python are
 - + (addition),
 - - (subtraction),
 - * (multiplication),
 - / (division), and
 - ** (exponentiation)

Examples

- $10 + 20$
- $25 - 15$
- $20 / 10$
- $5 * 10$ (5 times 10)
- $2 ** 4$ (2 to the 4th power)
- **$10 * (20 + 5)$ CORRECT**
- **$10(20 + 5)$ INCORRECT**

Basic Input Function

- The programs that we will write request and get information from the user
 - `name = input('What is your name?: ')`
- Characters within quotes are called *strings* .
This particular use of a string, for requesting input from the user, is called a prompt
- The **input function** displays the string on the screen to prompt the user for input
 - o/p: What is your name?: Charles

Basic Output Function

- The print function is used to display information on the screen in Python.
- This may be used to display a message.
 - `>>> print('Welcome to My First Program!')`
 - Welcome to My First Program!
- used to output the value of a variable
 - `>>> n =10`
 - `>>> print(n)`
 - 10

- To display a combination of both strings and variables
 - `>>> name = input('What is your name?: ')`
 - What is your name?: Charles
 - `>>> print('Hello', name)`
 - Hello Charles

Summary

- In Python, **input** is used to request and get information from the user, and
- **Print** is used to display information on the screen.