



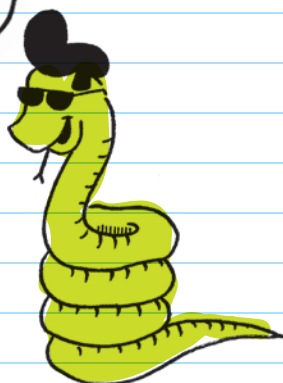
# Chapter 24



## GETTING STARTED WITH PYTHON

### INTRODUCING PYTHON

Python is one of the most widely used and easy-to-learn programming languages, which makes it popular for beginners. It can be used for many types of projects, ranging from designing websites to examining large amounts of data.



Python comes with many useful built-in **FUNCTIONS**, or tools, including:

- math functions like basic operations, square root, and choosing a random number
- options for drawing graphics
- user-friendly menus and buttons

## IDLE

Python code is written in an **INTEGRATED DEVELOPMENT ENVIRONMENT PROGRAM (IDE)** like IDLE (Integrated Development and Learning Environment), the one that comes with Python when you install it.

The program IDLE is installed along with Python. It has two different windows: the **SHELL WINDOW** and the **EDITOR WINDOW**.

### **INTEGRATED DEVELOPMENT ENVIRONMENT (IDE)**

A program that programmers use to type out and edit code and to create Python programs

The shell window is the window that appears when you open IDLE. On the screen you'll see ">>>," which shows you where to start typing.

The >>> symbol is called the **prompt**.

To run code in the shell window, type it in next to the prompt and press enter. The **OUTPUT** of your code will appear on the line below. Or, if your code doesn't run properly, an error message will appear.

## OUTPUT

The result of the code; what you see after the code has run

**FOR EXAMPLE,** you can type in the code `print("Hello, World!")` and your output will be "Hello, World!" like this:

```
>>> print("Hello, World!")  
Hello, World!  
>>> |
```

The shell window is great for running small pieces of code, but isn't good for writing whole programs because you can't save your work.

Shell window

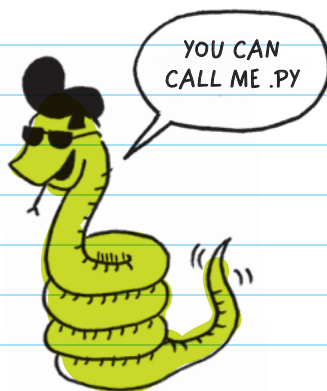


The editor window is for writing out whole programs that are saved as files. The editor window starts out as a completely blank, untitled file. Python files end in `.py`, and you can save them anywhere on your computer. An example of a Python file name would be `firstproject.py`.

*This is a file extension.  
It names the format of a file.*

When working in Python:

- name the file something that's related to your project
- save it somewhere that you'll remember
- save your work often



### SAVING FILES TIP

Create a new folder called “Python\_Projects” inside your “My Documents” folder to save all your Python project files. This will help you stay organized and help you remember where to find your work.

# CODE

Instructions must be written using code. All parts of the code have to be written according to the rules of the Python programming language.

The rules for writing programs are called **syntax**.

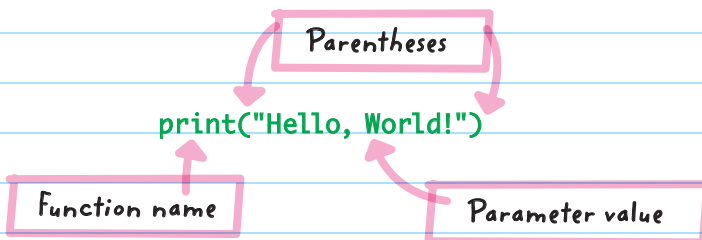
Python comes with built-in functions (a section of code that performs a specific task). One of the functions is called **print**. The print function **print()** will display in the shell window the text that you add as a **PARAMETER VALUE**.

## PARAMETER VALUE

The text put within the parentheses of a function

## Hello, Python

"Hello, World!" is one of the most basic programs you can write in any computer language. The "Hello, World!" program can be made in Python by calling the print function and typing "Hello, World!" as the parameter value like this:



The `print()` function tells the computer to display the parameter value.

To **call a function** means to instruct the computer to use that specific tool.

Be very careful when typing out your code. If words are misspelled, your program may not run properly. Do not add extra spaces or symbols. Capitalization also matters. For example, entering "Print" instead of "print" won't work.



## KEEPING ORGANIZED

### **COMMENTS** in

your code are little notes to yourself and other programmers. Comments aren't run as part of the program but can be read by

BULLETIN BOARD



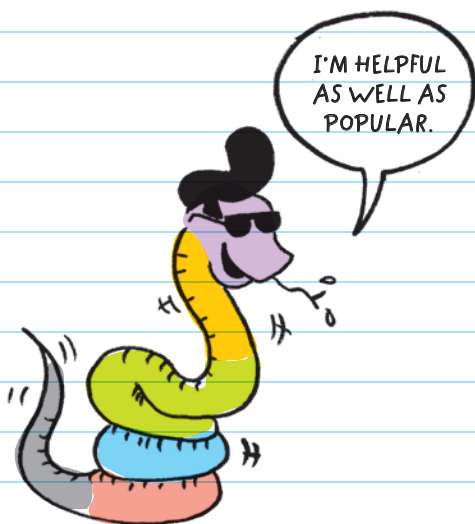
anyone reading your code. They act like sticky notes and can help organize your thoughts. Comments can be reminders, explanations about the code, and questions.

To make a comment in Python, use either the # symbol for a one-line comment or three quotation marks—single (') or double (")—for multiple lines.

# Comment on one line

'''Multiline  
comment can take  
many rows.'''

Single-line comments use the # only at the beginning, but multiline comments open and close with the quotation marks.



## Helpful Colors

Both the shell and editor windows automatically change the color of your text to help you read your code.

**Purple** is for built-in functions. For example, `print()` is a built-in function.

**Orange** is for key words that have special meaning, like `"if"` and `"True"`.

**Green** is for all text that appears in quotation marks.

Double or single quotation marks can be used as long as they match—in other words, don't start with single quotation marks and end with double quotation marks.

**Blue** is for the output text from when the program runs.

**Red** is for error messages that appear when the program doesn't run properly.

**Black** is for all the rest of the text in the program.







# CHECK YOUR KNOWLEDGE

1. Why do the shell and editor windows automatically change the color of your text as you type?
2. What does the IDLE program do? Why is it helpful?
3. Write in the blank which window you should use for each of the following:
  - A. \_\_\_\_\_ You want to write a large program in Python.
  - B. \_\_\_\_\_ You want to save your work.
  - C. \_\_\_\_\_ You want to quickly run a small piece of code.
4. Match each color in the left column with what it represents in IDLE in the right column.

A. Output	Purple
B. Text inside quotation marks	Orange
C. Key words	Green
D. Error	Blue
E. Built-in function	Red

5. Python (is/is not) a programming language used by professionals to create popular programs like YouTube and Google.
6. Why would you want to put comments in your code?
7. Which function should you use to display text in the shell window?
8. Draw the symbols around the text below to turn the sentences into a one-line or multiple-line comment.

Make this a one-line comment.

Make this a  
multiple-line comment.

# CHECK YOUR ANSWERS



1. The colors help you, the programmer, read your code more easily.
2. IDLE is used to write and run Python programs. It can be used to test short snippets of code or run .py program files.
3. A. Editor  
B. Editor  
C. Shell
4. purple: 5      green: 2      red: 4  
orange: 3      blue: 1
5. is
6. Comments help you organize your code, and they make it easier for you or other programmers to understand what each section of code does without having to read through the actual code.

7. `print()`

8. `#` Make this a one-line comment.

`'''` Make this a  
multiple-line comment.`'''`

*Or, you can also use double quotation marks:*

`"""` Make this a  
multiple-line comment.`"""`



