Bonus Chapter 5 — Using IDLE

Introduction

When programming, it is often easier to use an Integrated Development Environment (IDE) to combine editing, compiling, and debugging your programs. The standard Python install includes an IDE named "IDLE". IDLE stands for Integrated Development Learning Development. In the author's experience, IDLE is not the most intuitive or helpful IDE, but it is simple and quick to learn.

Objectives

Upon completion of this chapter's exercises, you should be able to:
- Install Python3 on a Windows PC.
- Use the IDLE shell to execute simple Python statements and read the result.
- Use the IDLE editor to create, edit, and execute multi-line Python programs.
- Save and retrieve programs from a storage device.

Prerequisites

This chapter has no prerequisites. If the IDLE IDE is being used in the classroom, this should be introduced before Chapter 1.

What is IDLE?

IDLE is an integrated editor, shell, debugger, and compiler for Python. It is installed with most Python implementations and is cross platform.

`IDE`	Concept
IDE – Integrated Development Environment https://en.wikipedia.org/wiki/Integrated_development_environment	

`IDLE`	Appliction
Integrated Development and Learning Environment (IDLE) is a simple IDE for learning Python. It is cross platform and will run under Windows, MacOS,	

LINUX and other systems.	
https://docs.python.org/3/library/idle.html	

Starting IDLE

The following instructions and images are from a 64-bit installation of Windows 10. Your actual computer may look somewhat different and you may need to make adjustments.

You must first have Python installed on your computer. You can find a link to the Web installer at https://www.python.org/downloads/. On the Download page you will find a button that will allow you to download and install a current version of Python 3 on your PC. You may need to have your administrator load this on your computer if you do not have administrative rights.
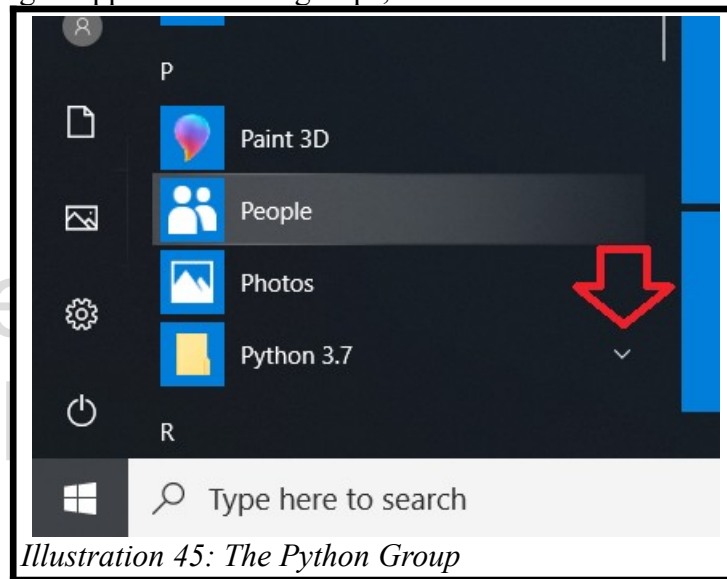

Illustration 43: Python.org Download Page

Once you have downloaded and installed Python, it is time to get started with IDLE. To open IDLE, go to the Windows button on the bottom left-hand corner of your screen and click.

Illustration 44: The Windows Button

In the alphabetical listing of applications and groups, scroll down to the "P"s and open up Python 3.

Illustration 45: The Python Group

There are several application icons in the Python 3 group, but the one you want is named IDLE. Click on it and the IDLE shell window will open.

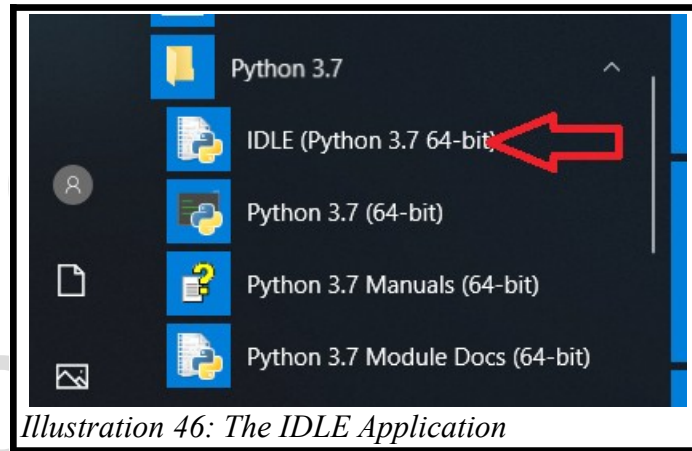*Illustration 46: The IDLE Application*

The IDLE Shell

When the IDLE application, you will be shown the "Shell" window. The shell is where you will type in Python statements directly; see the text output of your programs; and see error messages about your programs.
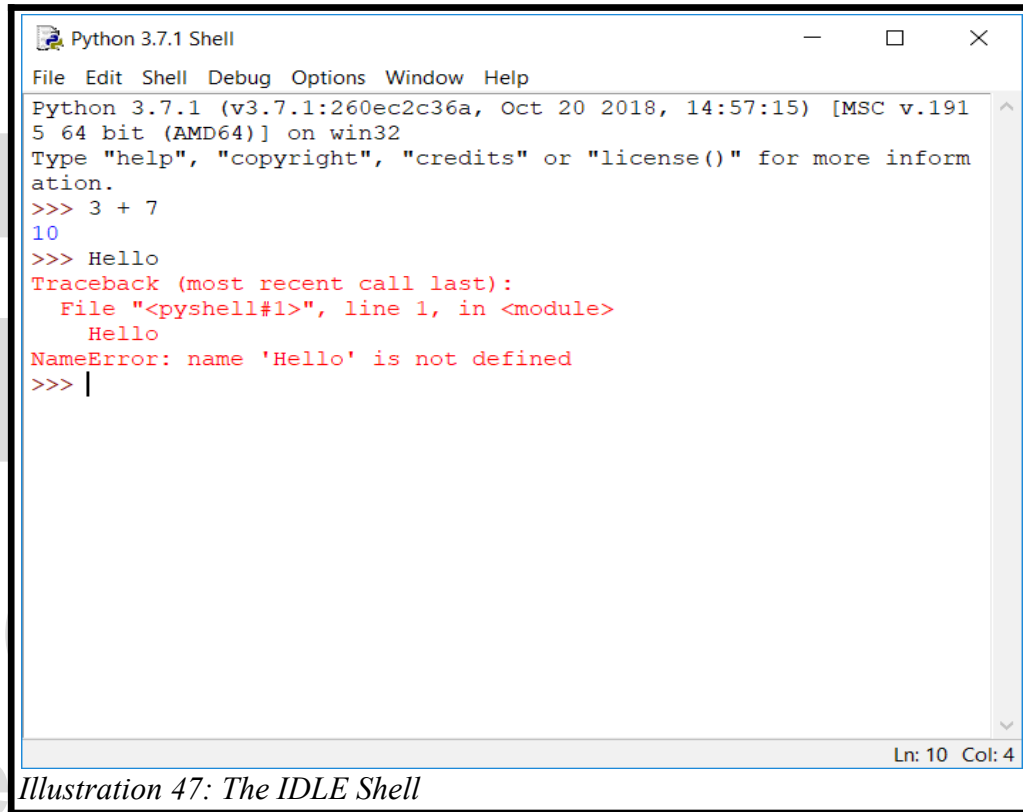
Illustration 47: The IDLE Shell

In the shell you may type in Python statements and expressions. These will be executed immediately, unless they are part of a suite of statements. Suites are executed when a blank line is entered.

From the shell, you may use the File menu to open Python programs that you have created with the editor, or create a new blank editor window.
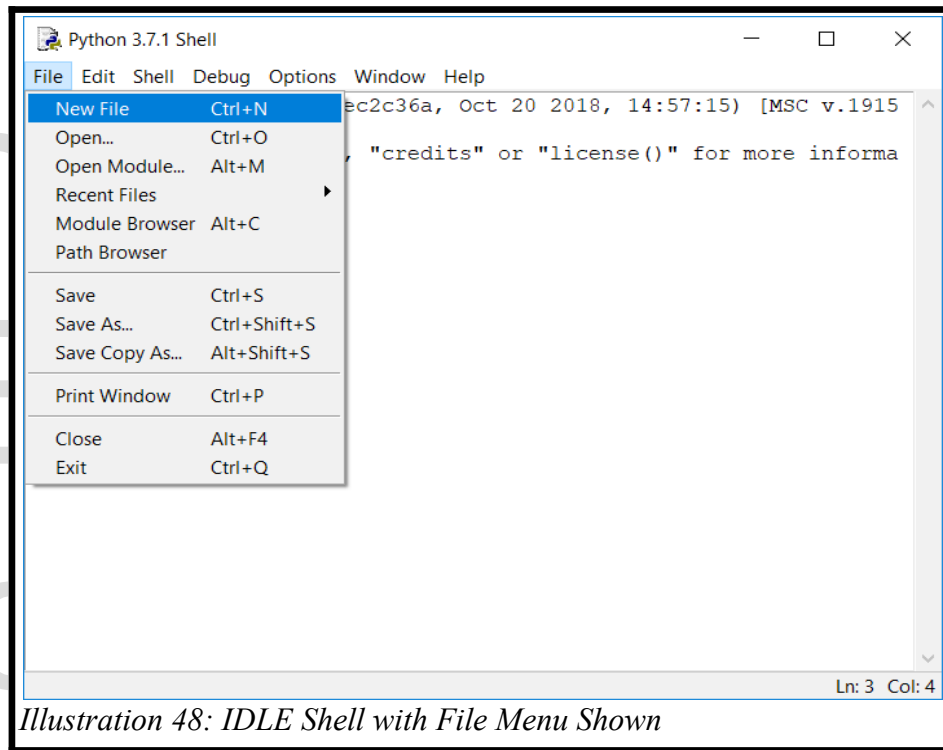
Illustration 48: IDLE Shell with File Menu Shown

The Editor

After you choose "New-File" from the Shell an empty editor window will be displayed. It is in this window that you can type your python program. You will see that in the top bar of the editor the name "Untitled" will be displayed. If you opened an existing file, the name of that source file will be displayed. A programmer may have several editor-windows open at the same time, but be careful as this may become very confusing.
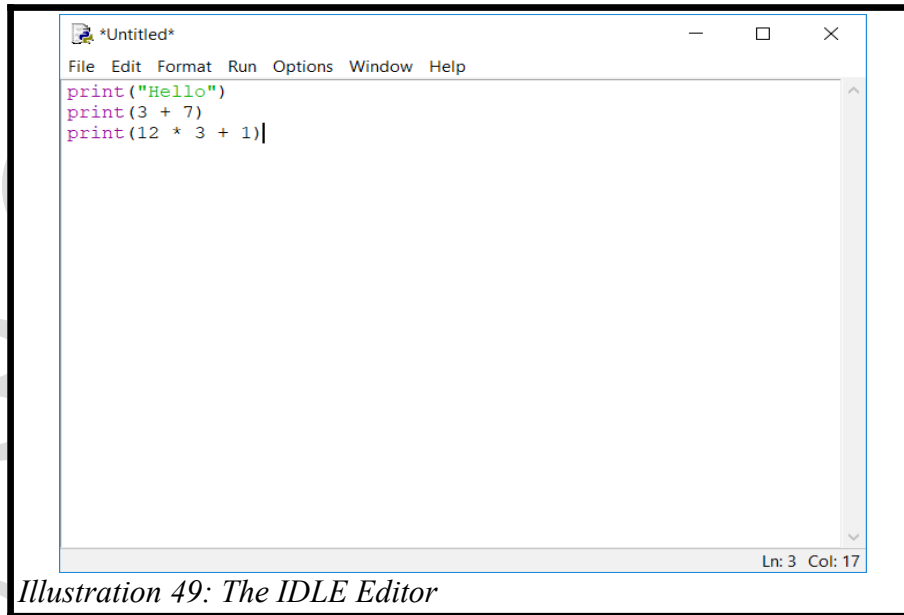
Illustration 49: The IDLE Editor

Once you have typed in your code and you are ready to execute it, you may click on the <u>R</u>un menu then Run Module or you may press the F5 function key.
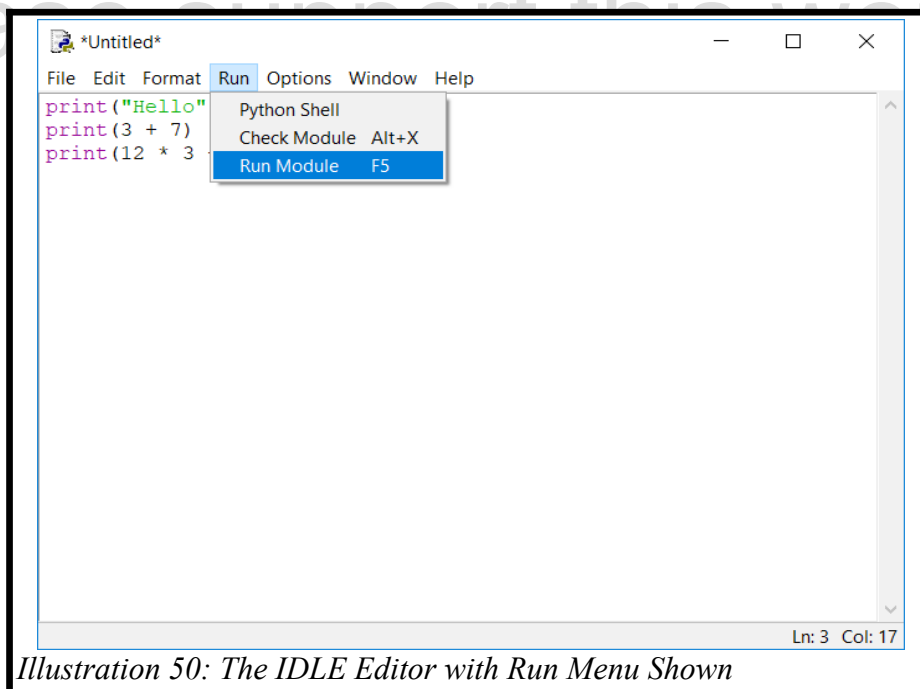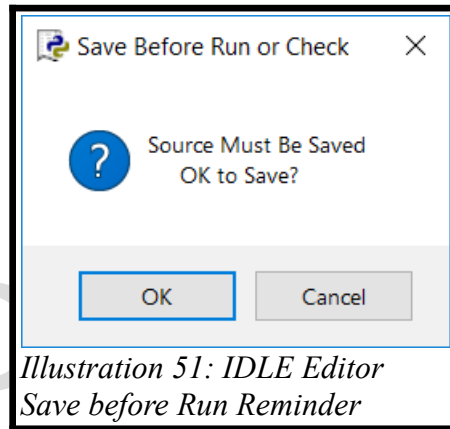

Illustration 50: The IDLE Editor with Run Menu Shown

IDLE, by default, will ask you if you want to save the changes you have made by displaying the "Save before Run" dialog. Make sure that you want to overwrite the previous version of your program, before

you click "OK".

Illustration 51: IDLE Editor
Save before Run Reminder

If the program is new and has not been saved, a save-as dialog will appear asking you were you want the program saved and to give the program a new name. Typically, programmers do not save their programs in the Python install folder.
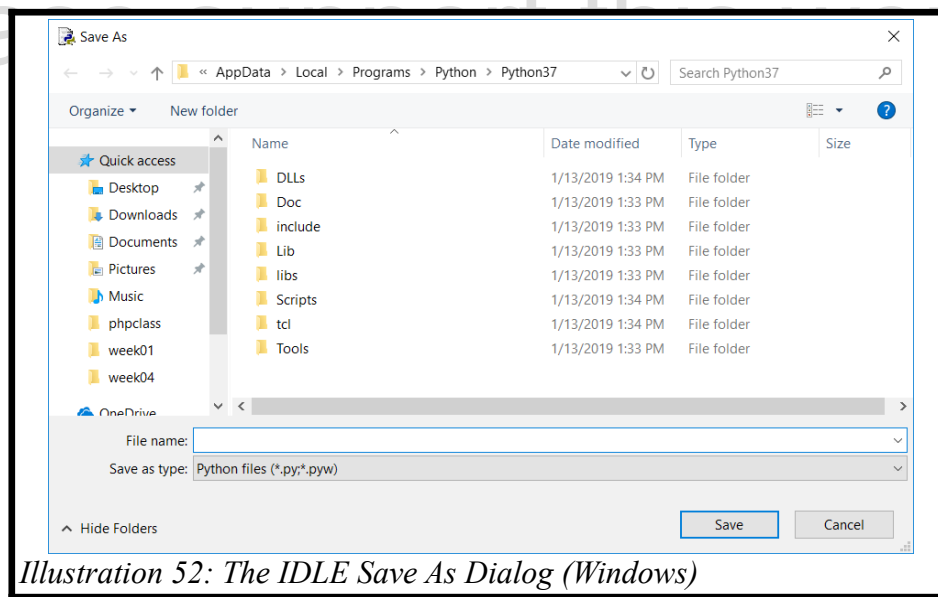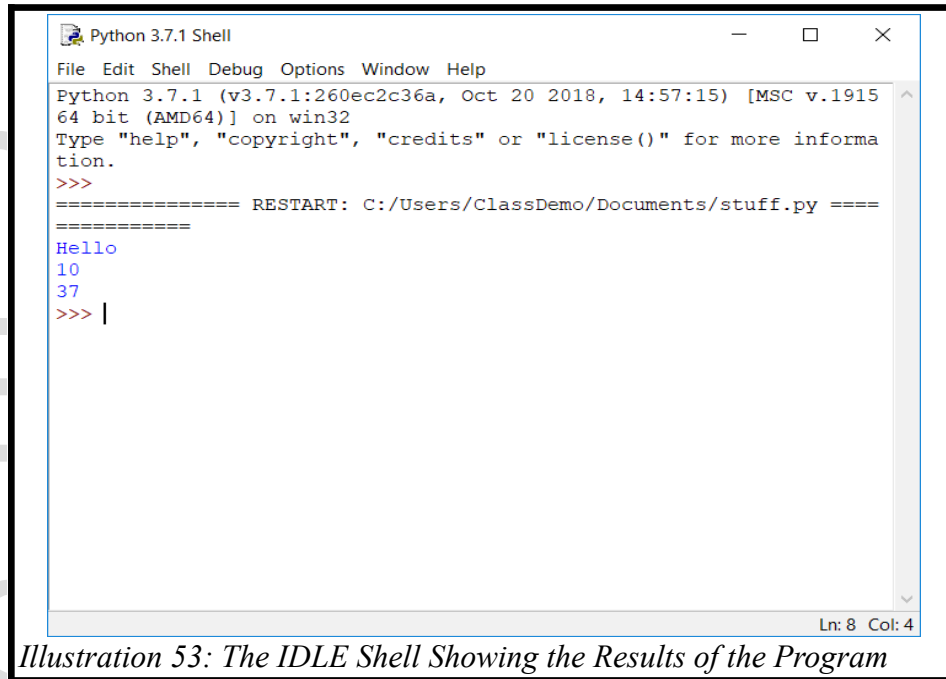

Illustration 52: The IDLE Save As Dialog (Windows)

Once the program is saved, it is executed. The results of any output or errors fill be displayed on the Shell window for you to review.

Illustration 53: The IDLE Shell Showing the Results of the Program

Summary

When IDLE is started the shell window is displayed. From the shell window a programmer may enter ad-hock statements, create new editor windows, and load existing programs into editor windows. In an editor window a programmer may change, save, and run a program. The output will be displayed back in the shell window.

Important Terms

- editor
- file
- IDE
- IDLE
- open dialog
- save dialog
- shell
- window

Exercises

1. On your personal computer install the latest version of Python 3.

2. Open IDLE and enter the following expressions into the shell. Pay attention to the results and errors that are displayed.

- 1+2
- 3 * 9 + 8
- "two" * 2
- "two" − 1
- "hello" + " " + "world"

Word Search

```
o · w i d e i b s g r
p o w i n d o w a i w
e d q g i t i e v i a
n r z f i l e d e i o
· s h e l l u l · z s
d s s h g v l d d l p
i g i w e l l o i v t
a e d i t o r g a e r
l o o h k d i d l e ·
o q a i v l s e o m b
g s d y c · g w g f l
```

IDE, IDLE, editor, file, open dialog, save dialog, shell, window

References

https://en.wikipedia.org/wiki/Integrated_development_environment