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IT FDN 110 A

Assignment 01

Python Scripts

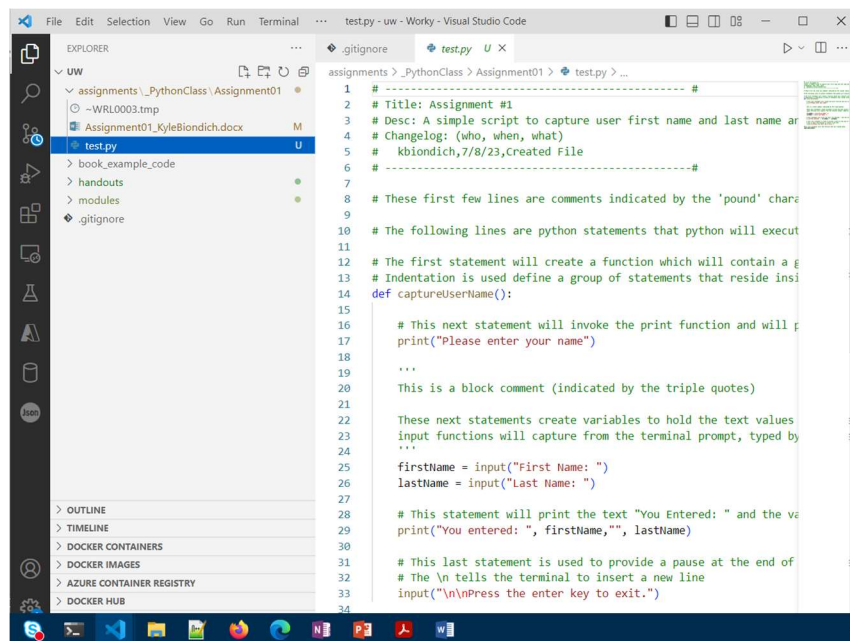
Introduction

In this paper I will review the process I went through to create a python script that displays messages to the user by using the python 'print' function and captures user input through the python 'input' function. I initially explain why python is a program language to use and then explain all the steps I went through to construct the script.

Why Python

Python is an open source programming language that is easy to use and is used in many industries and companies around the world. It has a simplified approach to programming and allows a user to create python related files with a wide variety of methods or interactive development environments (IDE). This approach allows for a user to become familiar with programming more quickly and easily regardless of the system they are using it on. (Python (programming language), [https://en.wikipedia.org/wiki/Python_\(programming_language\)](https://en.wikipedia.org/wiki/Python_(programming_language)))(External site)

Below is an example of a script comprised of python code. (Figure 1).



```
1 # ----- #
2 # Title: Assignment #1
3 # Desc: A simple script to capture user first name and last name and
4 # Changelog: (who, when, what)
5 # kbiondich,7/8/23, Created File
6 # ----- #
7
8 # These first few lines are comments indicated by the 'pound' char
9
10 # The following lines are python statements that python will execut
11
12 # The first statement will create a function which will contain a g
13 # Indentation is used define a group of statements that reside insi
14 def captureUserName():
15
16     # This next statement will invoke the print function and will p
17     print("Please enter your name")
18
19     '''
20     This is a block comment (indicated by the triple quotes)
21
22     These next statements create variables to hold the text values
23     input functions will capture from the terminal prompt, typed by
24     '''
25     firstName = input("First Name: ")
26     lastName = input("Last Name: ")
27
28     # This statement will print the text "You Entered: " and the va
29     print("You entered: ", firstName,"", lastName)
30
31     # This last statement is used to provide a pause at the end of
32     # The \n tells the terminal to insert a new line
33     input("\n\nPress the enter key to exit.")
34
```

Figure 1: Example of python in a script file

Intended Outcome

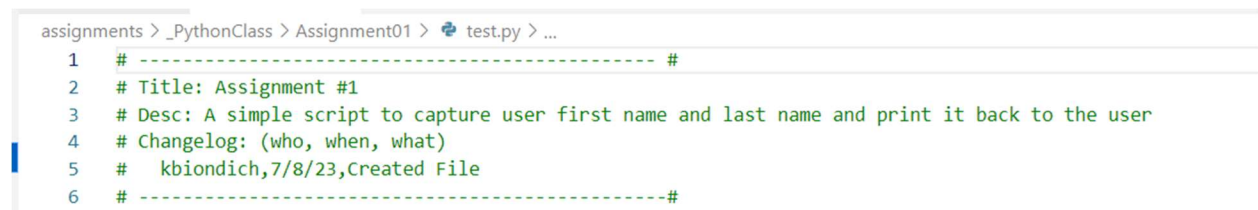
The desired outcome of the script is to present the user with a statement that asks them to enter their name, then provides a line for capturing their first name, then a line for capturing their last name, and finally presenting the captured results in a statement back to the user. The script then utilizes the input function to provide a pause at the end of the script so the user can read the provided statements.

Writing a Python Script

Following the examples that were provided in the course lecture video “Intro to Python Mod01 – Lecture” (<https://www.youtube.com/watch?v=pa9GRFAYm4s&list=PLfycUyp06LG9fZllqBrxLcNV4CR50HEX&index=1>) (external site), I followed the instructions by Randal Root for installing python on my windows pc and utilized the examples of the print function and input function with the following methodology.

Beginning the Python Script

Following the suggestion in the lecture video, I started the script with a ‘Script Header’. This provides a record of when the script was written, the name of the script, and what was changed / added, by who and when. (Figure 2).

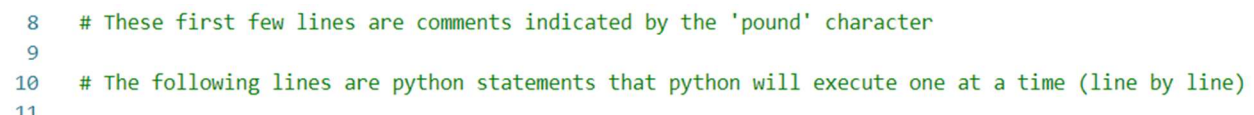


```
assignments > _PythonClass > Assignment01 > test.py > ...
1  # ----- #
2  # Title: Assignment #1
3  # Desc: A simple script to capture user first name and last name and print it back to the user
4  # Changelog: (who, when, what)
5  #   kbiondich,7/8/23,Created File
6  # -----#
```

Figure 2: Python Code Script Header

Using Comments in the Python Script

Use of comments allows for a user to understand what the code is intending to do. Comments are written using the ‘#’ character at the start of a line and were added prior to each of the python statements.



```
8  # These first few lines are comments indicated by the 'pound' character
9
10 # The following lines are python statements that python will execute one at a time (line by line)
11
```

Figure 3: Python Code Comments

Defining a Function

A function is a group of statements that are contained within a higher-level statement. A function is defined by first providing the ‘def’ command followed by a custom name, in this case, ‘captureUserName’ followed by an open and closed parentheses.

```

12 # The first statement will create a function which will contain a group of statements
13 # Indentation is used define a group of statements that reside inside the function
14 def captureUserName():
15 |

```

Figure 4: Python Code Define Statement

Grouping Python Statements in the Define Function

Groups of statements that are contained inside a function are specified by the use of a tab indentation at the beginning of each of the lines.

```

12 # The first statement will create a function which will contain a group of statements
13 # Indentation is used define a group of statements that reside inside the function
14 def captureUserName():
15 |
16 |     # This next statement will invoke the print function and will print to the terminal
17 |     print("Please enter your name")
18 |
19 |     '''
20 |     This is a block comment (indicated by the triple quotes)
21 |
22 |     These next statements create variables to hold the text values that the
23 |     input functions will capture from the terminal prompt, typed by the user
24 |     '''
25 |     firstName = input("First Name: ")
26 |     lastName = input("Last Name: ")
27 |
28 |     # This statement will print the text "You Entered: " and the values of the variables in a concatenated output
29 |     print("You entered: ", firstName,"", lastName)
30 |
31 |     # This last statement is used to provide a pause at the end of the file so the user can read the previous output
32 |     # The \n tells the terminal to insert a new line
33 |     input("\n\nPress the enter key to exit.")

```

Figure 5: Python Code Grouped Statements

Using the Print Function, Defining Variables, and Using the Input Function

The print function is a built-in python function that prints to the console the values of whatever is contained within the parenthesis.

A variable is an element that temporarily stores the value of something that it has been assigned to.

And lastly the input function is a built-in python function that presents a statement to the user, describing for the intended input from the user, and captures that input from the keyboard that is typed into command prompt. The input is then captured by finally pressing 'enter' on the keyboard.

In Figure 5, line 17, the print function is used to present a statement of "Please enter your name" to the user from the command prompt.

On Line 25, a variable of 'firstName' is created and assigned to the value that the input function will capture from the user. The input function provides a statement of "First Name: " to the user, indicating that the user should input their first name. Line 26 uses a variable 'lastName' to store the value of the input function capturing the last name of the user.

The print statement on line 29 prints to the command prompt the text string “You Entered: “ concatenated with the values stored in the variables ‘firstName’ and ‘lastName’.

Lastly, the final input function statement on line 33 prints to the command prompt two new lines, indicated by ‘\n’ and the text string “Press the enter key to exit”, informing the user how to end the program. This final input statement is used to provide a pause at the end of the script so the user has time to view the results.

Calling the Defined Function

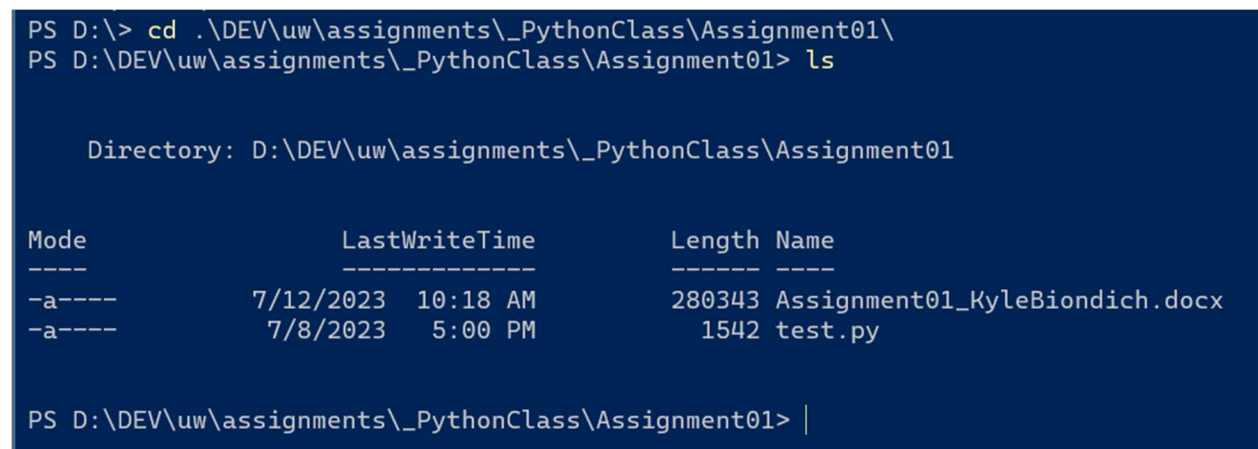
The last line in the script calls the custom function ‘captureUserName’ that was defined in Figure 5, line 14. This statement instructs python to find the definition of ‘captureUserName’ and to execute the statements contained within it. According to the lecture, this area of the script is typically defined as the “main” script body.

```
35  #This last statement calls the function that was created above
36  captureUserName()
```

Figure 6: Python Code Calling the Function

Running the Script

Running the script starts with opening the windows command prompt and using the ‘change directory’ command to position the command prompt to the directory containing the python script. This can be seen in Figure 7. Here command ‘cd’ was entered followed by the path to the directory “.\DEV\uw\assignments_PythonClass\Assignment01\”



```
PS D:\> cd .\DEV\uw\assignments\_PythonClass\Assignment01\
PS D:\DEV\uw\assignments\_PythonClass\Assignment01> ls

Directory: D:\DEV\uw\assignments\_PythonClass\Assignment01

Mode                LastWriteTime         Length Name
----                -
-a-----          7/12/2023  10:18 AM        280343 Assignment01_KyleBiondich.docx
-a-----          7/8/2023   5:00 PM         1542 test.py

PS D:\DEV\uw\assignments\_PythonClass\Assignment01> |
```

Figure 7: Changing to the Script Directory

Next, the command ‘python .\test.py’ is entered to tell the command prompt to use the installed python program and open the ‘test.py’ file with it. (Figure 8).

```
PS D:\DEV\uw\assignments\_PythonClass\Assignment01> python .\test.py
```

Figure 8: Running the Script

Running the Script Result

In Figure 9, it can be seen that the script runs as intended.

```
PS D:\DEV\uw\assignments\_PythonClass\Assignment01> python .\test.py
Please enter your name
First Name: Kyle
Last Name: Biondich
You entered:  Kyle  Biondich

Press the enter key to exit.
```

Figure 9: Running the Script Result

Summary

In summary, utilizing all the resources provided to the class and the online lecture, this paper outlines all the steps that were taken to create a python script that results in a successful execution of the intended output. Following the steps outlined above will allow for the audience to recreate the presented result.

References

Python (programming language). (n.d.). Retrieved July 2023, from wikipedia:
[https://en.wikipedia.org/wiki/Python_\(programming_language\)](https://en.wikipedia.org/wiki/Python_(programming_language))

Root, R. (n.d.). *Introduction To Programing using Python*. Retrieved from youtube.com:
<https://www.youtube.com/watch?v=pa9GRFAYm4s&list=PLfycUyp06LG9fZllqBrxLcNV4CR50HEX&index=1>