I/O and File Handling

Exercises

Week 8

Prior to attempting these exercises ensure you have read the lecture notes and/or viewed the video, and followed the practical. You may wish to use the Python interpreter in interactive mode to help work out the solutions to some of the questions.

Download and store this document within your own filespace, so the contents can be edited. You will be able to refer to it during the test in Week 6.

Enter your answers directly into the highlighted boxes.

For more information about the module delivery, assessment and feedback please refer to the module within the MyBeckett portal.

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Which of the following represents a Python *f-string*?

1. "Hello {}, you have logged in".format(name)
2. "Hello {name}, you have logged in"
3. f"Hello {name}, you have logged in"
4. "Hello %s, you have logged in" % name

*Answer:*  c) f"Hello {name}, you have logged in"

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Given the following definition of value, what would each of the following statements display?

value = 10.768572

print(f"Value is {value}")

*Answer:* Value is 10.768572

print(f"Value is {value \* 10}")

*Answer:* Value is 107.68572

print(f"Value is {value:.2f}")

*Answer:*

print(f"Value is {value:16.2f}")

*Answer:* Value is 10.77

print(f"Value is {value:0>16.2f}")

*Answer:* Value is 0000000000010.77

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Within an *f-string* **format specifier** what does the ‘^’ alignment character signify?

*Answer:*

Within an f-string format specifier '^' alignment character is used to indicate the value should be centered within the avaliable space.

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Write a statement which uses the str.format() to generate the same output as the following *f-string* statement -

print(f"pi to 5 decimal places is {math.pi:.5f}")

*Answer:*

import math

print("pi to 5 decimal places is {:.5f}".format(math.pi))

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What would the following statement display?

print("Length = {1} Width = {0}".format(10,20))

*Answer:* Length = 20 Width = 10

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What *exactly* would the following statement display?

print("Hello".rjust(10))

*Answer:* Hello

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On which older programming language is the *%-formatting* style loosely based?

*Answer:* On C programming language the *%-formatting* style is loosely based.

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Write a Python program that uses a loop and the str.rjust() method to generate the following output.

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*Hint:* The program will start as follows

for n in range(10,0,-1):

line = "#" \* n

# rest of code....

*Answer:*

for n in range(10,0,-1):

line = "#" \* n

print(line.rjust(10 + n - 1))

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What is the basic element that *all* computer files contain?

*Answer:*  The basic element that *all* computer files contain is data.

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What *function* must be called before the contents of a file can be accessed?

*Answer:* open () function must be called before the contents of a file can be accessed.

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What *method* must be called on a file object once processing is complete?

*Answer:* close () method must be called on a file object once processing is complete.

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Following execution of the given statement, would the file ‘myfile.txt’ be open for *reading* or for *writing*?

f = open("myfile.txt")

*Answer:* Following execution of the given statement, the file ‘myfile.txt’ be open for *reading.*

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Following execution of the given statement, would the file yourfile.txt be open for *reading* or for *writing*?

f2 = open("yourfile.txt", "w")

*Answer:* Following execution of the given statement, the file yourfile.txt be open for *writing.*

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Following execution of the given statement, what would be the *mode of operation* applied to file gfxlib.so ?

f3 = open("gfxlib.so", "r+b")

*Answer:* Following execution of the given statement, the *mode of operation* applied to file gfxlib.so would be in binary read and write mode.

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What is the difference between the two following method calls?

f.readline()

f.readlines()

*Answer:*

f.readline(): This method read a single line from the file.

It will return an empty string.

f.readlines(): This method read all lines from the file.

It will return an empty list.

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How much of the file content would be read with the following method call?

content = f.read()

*Answer:* It reads the entire contents of the file object 'f' and stores it in the variable content.

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If the variable ‘my\_file’ referred to a text file, what would the following code do?

for next in my\_file:

print(next)

*Answer:* It iterates through the lines of text file using a for loop and prints each line.

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What is the issue with the following code? And how could it be fixed?

f = open("details.txt", "w")

total = 100

f.write(total)

f.close()

*Answer:*

The issue with the given code is that the write method expects a string as its argument.

To fix this, you need to convert the total variable to a string before writing it to the file.

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What is the purpose of the file tell() method?

*Answer:* The purpose of the tell() method is to determine the current position of the file cursor or pointer within a file.

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What does the following code do?

f.seek(0)

*Answer:* It sets the file's current position to the beginning of the file.

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Why is file handling often done using a ‘with’ statement as shown below?

with open("data.txt") as f:

lines = f.readlines()

*Answer:* Using 'with' statement within file handling makes the code readable and more concise. It ensures that the file is properly opened and closed.

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**Exercises are complete**

Save this logbook with your answers. Then ask your tutor to check your responses to each question.