# 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 represents a python f-string as it starts with ‘f’ and has { } within the quotation.

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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:*

Value is 10.77.

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:*

The ^ signifies centre alignment.

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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:*

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. As the position is passed within the object.

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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:*

The older programming language is C.

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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(11))

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

*Answer:*

Computer files contains text or binary that people are able to read and write information.

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

*Answer:*

The open() function is used to access the contents of a file.

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

*Answer:*

Once the processing is complete the close() method is called.

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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:*

The default open function without any second parameter would just be able to read the file.

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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:*

The file would be open for writing as the second parameter is ‘w’.

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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:*

The mode would be reading and writing in binary mode.

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What is the difference between the two following method calls?

f.readline()

f.readlines()

*Answer:*

The first method call is reading each line as a string. And the second method is to read all the lines as a list.

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

content = f.read()

*Answer:*

The f.read would read all contents of ‘f’.

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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:*

The code would iterate over each line and print it.

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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:*

When a non-string value is passed in write parameter then it would not work.

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

*Answer:*

The tell() method finds the current file position.

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What does the following code do?

f.seek(0)

*Answer:*

The code would move the position to the start 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:*

This helps in closing the file even if there is no exception.

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## **Exercises are complete**

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