# 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:*

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 00000000010.77

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

*Answer:*

It signify the centre alignment of the values

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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

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

print(output)

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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:*

C programming

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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))

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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()

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

*Answer:*

close()

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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:*

‘myfile.txt’ will be open in default mode i.e 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:*

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:*

read and write in binary mode

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What is the difference between the two following method calls?

f.readline()

f.readlines()

*Answer:*

f.readline() reads a single line from the file and returns as a string

f.readlines() reads all the lines from the file and returns as a list of strings

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

content = f.read()

*Answer:*

The entire content of the file would be read

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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:*

Print each line from the file

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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 is that the write() method expects a string value but the total is of integer type.

We can fix it by converting the total into string type while passing through write() method

f.write(str(total))

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

*Answer:*

It is used to determine the current position of the file cursor

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What does the following code do?

f.seek(0)

*Answer:*

It moves the file cursor 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:*

It automatically closes the file after use

The code is more manageable

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## **Exercises are complete**

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