# 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

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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 10.76

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 caret (^) in an f-string format specifier means center 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

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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 %-formatting style in Python is loosely based on the printf-style

formatting used in C and 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(12))

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

*Answer:*

Bit

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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:*

Yes, the file ‘myfile.txt’ would be open for writing.

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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:*

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:*

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

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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, while f.readlines() reads all

the lines and returns them as a list of strings. So, one is for reading just one line,

and the other is for grabbing the whole

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

content = f.read()

*Answer:*

It reads entire file at once.

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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:*

This code would loop through each line with the text file specified by the

variable my\_file. Each line in the loop would be represented by the variable next.

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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:*

write() function expects a string as input but we are assigning integer.

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

*Answer:*

To retrieve the current postition of file pointer.

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What does the following code do?

f.seek(0)

*Answer:*

It is used to change the current postion of the file pointer.

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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:*

The with statement ensures that the file is automatically closed after use,

reducing the risk of resource leaks.

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## **Exercises are complete**

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