# 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:*

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:*

10.768572

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

*Answer:*

107.68572

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

*Answer:*

10.77

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

*Answer:*

10.77

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

*Answer:*

000000000010.77

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

*Answer:*

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' (padded with spaces to the left).

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

*Answer:*

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(10))

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

*Answer:*

Bytes

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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:*

The file will be open for reading (r mode), as this is the default mode.

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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 will be open for writing (w mode), and any existing content in the file will be overwritten.

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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:*

readline() reads a single line; readlines() reads all lines and returns them 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 entire file.

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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 iterates over each line in the file my\_file and prints it. Each iteration retrieves the next line from the file until the end of the file is reached.

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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:*

f.write(str(total))

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

*Answer:*

Returns the current position of the file pointer.

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What does the following code do?

f.seek(0)

*Answer:*

Moves the file pointer to the beginning.

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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:*

Ensures the file is properly closed, even if an error occurs.

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## **Exercises are complete**

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