# 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:*

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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In an f-string format specifier, the ^ alignment character signifies center alignment within the specified width.*Answer:*

In an f-string format specifier, the ^ alignment character signifies center alignment within the specified width.

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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 language

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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 + (10 - n)))

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

*Answer:*

0s and 1s

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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

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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:*

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:*

readline() reads one line at a time, while readlines() reads all lines and returns them 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:*

entire content of the file “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 you've provided would iterate through each line in the text file referenced by the variable my\_file and print 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 provided code is that the write() method expects a string as its argument, but the variable total is an integer  
to fix the code we can do   
f = open("details.txt", "w")

total = 100

f.write(str(total)) # Convert 'total' to a string before writing

f.close()

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

*Answer:*

The tell() method in Python is used to determine the current position or the current byte offset from the beginning of a file. It returns an integer value that represents the current position of the file cursor.

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What does the following code do?

f.seek(0)

*Answer:*

The f.seek(0) code in Python is used to move the file cursor to a specified position within the file. In this case, f.seek(0) moves the 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:*

Using a with statement for file handling in Python is considered good practice because it automatically handles the opening and closing of files and ensures proper cleanup, even if an error occurs during file processing.

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## **Exercises are complete**

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