# 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 0000000000010.77

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

*Answer:*

Align centre

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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:*

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

    output\_line = line.rjust(10)

    print(output\_line)

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

*Answer:*

The basic element that all computer files contain texts or binary information.

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

*Answer:*

open() function

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

*Answer:*

close() method

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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:*

For 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:*

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:*

For 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:*

f.readline() is used to read first line (as a string).

f.readlines() is used to read all 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:*

content = f.read() reads entire contents of ‘f’ contents.

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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 print each line of 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:*

TypeError: write() argument must be str, not int

It can be fixed by using str(total) and it convert the integer total to a string,

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

*Answer:*

The tell() method id used to find the current position within a file.

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What does the following code do?

f.seek(0)

*Answer:*

f.seek(0) is used to move position back 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:*

The 'with' statement is used to encompass file handling code and provides built-in exception handling.

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## **Exercises are complete**

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