

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.

Which of the following represents a Python *f-string*?

- a) `"Hello {}, you have logged in".format(name)`
- b) `"Hello {name}, you have logged in"`
- c) `f"Hello {name}, you have logged in"`
- d) `"Hello %s, you have logged in" % name`

Answer:

c) a) `f"Hello {name}, you have logged in"`

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 00000000000010.77

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

Answer:

Align centre

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))
```

What would the following statement display?

```
print("Length = {1} Width = {0}".format(10,20))
```

Answer:

Length = 20 Width = 10

What *exactly* would the following statement display?

```
print("Hello".rjust(10))
```

Answer:

Hello

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

Answer:

C

Write a Python program that uses a loop and the `str.rjust()` method to generate the following output.

```

# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # #
# # # # # #
# # # # #
# # # #
# # #
# #
#

```

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))
```

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

Answer:

data

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

Answer:

```
file = open("example.txt", "r")
```

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

Answer:

```
close()
```

Following execution of the given statement, would the file 'myfile.txt' be open for *reading* or for *writing*?

```
f = open("myfile.txt")
```

Answer:

```
reading
```

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
```

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 file for reading in binary mode

What is the difference between the two following method calls?

```
f.readline()  
f.readlines()
```

Answer:

`f.readline()` = read the line
`f.readlines()` = read all lines

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

```
content = f.read()
```

Answer:

Entire content of the f

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 will iterate over each line in the text file represented by `'my_file'` and print each line

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 total is integer so it should be converted to string using:
`f.write(str(total))`

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

Answer:

To find the current position

What does the following code do?

```
f.seek(0)
```

Answer:

move position back to the start of the file

Why is file handling often done using a 'with' statement as shown below?

```
with open("data.txt") as f:
    lines = f.readlines()
```

Answer:

to encompass file handling code

Exercises are complete

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