# Scripts and Modules

## Exercises

### Week 5

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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When a Python program is stored within a text file (i.e. a *script*), what suffix should be used for the filename?

*Answer:*

.py suffix should be used.

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Is it necessary to use a special Integrated Development Environment (IDE) to write Python code in text files?

*Answer:*

No, an IDE is not necessary to write Python code in text files.

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When a *script* is executed from a file, are the results of evaluating expressions automatically displayed on the screen without the need of a print() function call?

*Answer:*

No, results of expression evaluation are not automatically displayed on screen in a script without print() function call.

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What command would need to be typed in an operating system terminal window in order to execute a Python script called PrintNames.py?

*Answer:*

python PrintNames.py

OR

py PrintNames.py

OR

python3 PrintNames.py

What command would need to be typed in a terminal in order to pass the values "John", "Eric", "Graham" as *command line arguments* to the PrintNames.py script?

*Answer:*

python PrintNames.py John Eric Graham

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When a Python script wishes to access *command line arguments*, what **module** needs to be imported?

*Answer:*

The sys module needs to be imported.

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What is the data-type of the sys.argv variable?

*Answer:*

sys.argv is of data type list.

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What is stored within the first element of the sys.argv variable?

*Answer:*

The absolute address along with the filename of the script being executed is the first element of sys.argv .

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Use a text editor to write the *script* called PrintNames.py. This should display any *command line arguments* that were passed during execution.

Once complete, place your solution in the answer box below.

*Answer:*

from sys import argv

for i in argv[1:]:

print(i)

Improve the solution so it uses an if statement to check that at least one name was passed, or otherwise print a message saying “no names provided”. Place your improved solution in the answer box below.

*Answer:*

from sys import argv

if len(argv)>1:

for i in argv[1:]:

print(i)

else:

print("no names provided")

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When using an import statement it is possible to provide an *alias* that can be used as an alternative name to access module content.

Write an **import** statement that imports the whole of the sys module, and renames it to my\_system.

*Answer:*

import sys as my\_system

Write a **from..import** statement that imports only the math.floor function, and renames it to lower

*Answer:*

from math import floor

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What is stored in a *symbol-table*?

*Answer:*

All the declared variables, built ins and imports in the program are stored as names in a symbol-table.

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Why is the following type of import statement generally not recommended?

from math import \*

*Answer:*

This clutters the symbol table and might cause name collisions.

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When working in *interactive-mode* what convenient function can be used to list all names defined within a module?

*Answer:*

dir()

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What is the value stored within the sys.path variable used for?

*Answer:*

sys.path stores the paths of the directories which are checked by the python interpreter when it imports or searches for a file in general.

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When a program is being executed as a *script* what value is assigned to the special variable \_\_name\_\_?

*Answer:*

\_\_name\_\_ is assigned the value \_\_main\_\_ when it is being executed as a script.

What value is assigned to the \_\_name\_\_ variable when a program has been imported as a *module*?

*Answer:*

The \_\_name\_\_ variable is assigned the file name without the .py when it is imported as a module

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Why is it useful for a program to be able to detect whether it is running as a *script*, or whether it has been imported as a *module*?

*Answer:*

A script has functions , initialisers and some processes to make use of them, when imported as a module , the initialisers and functions are required but the processes are not required and would rather ruin the program if they run, thus it would be useful if it could be detected if it is being run as a module and skip the processes that are not necessary to be run.

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## **Exercises are complete**

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