# 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:*

The .py suffix would be added to the end of a Python file.

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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 needed to write Python 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:*

The print() function should be used to express the results.

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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:*

As long as the terminal is in the same directory, the following command would be used:

python 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 would need to be imported to the Python file.

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

*Answer:*

All of the arguments are passed as strings, however the actual sys.argv itself would be a list.

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

*Answer:*

The file name is the first element of the ‘sys.argv’ variable.

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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:*

import sys

print(sys.argv[1:])

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:*

*import sys*

*if len(sys.argv) == 1:*

*print("No arguments provided.")*

*else:*

*print(sys.argv[1:])*

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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 as lower

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What is stored in a *symbol-table*?

*Answer:*

A symbol table would contain all of the variables and functions which are defined within a program.

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

from math import \*

*Answer:*

It imports lots of different functions and these may cause clashes and become confusing in a program with lots of different functions being used.

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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() can be used to list all of the names defined within a module.

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

*Answer:*

It is used for finding the path which is being searched for the modules to be imported.

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

*Answer:*

It would be set to \_\_main\_\_

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

*Answer:*

It would be set to the name of the.py file

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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:*

It is essential for this to be checked so that it runs in the way it is intended to by the user. For example, it would require a different set of commands for if it was to be running on the command line to if it was being called in another program.

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## **Exercises are complete**

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