Functions

Exercises

Week 4

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.

What must be done before a function that is not *built-in* to Python can be used in a program?

Answer:

It needs to be imported.

Given the following `import` statement, how would a call to the `sin()` function be made?

`import math`

Answer:

math.sin()

Given the following `import` statement, how would a call to the `sqrt()` function be made?

`from math import sqrt`

Answer:

sqrt()

What is the name of the common library that is available with all Python distributions?

Answer:

Python Standard Library is available with all Python distributions.

What keyword is used in Python to define a new function?

Answer:

'def' keyword is used to define a new function in Python.

Write some Python code that defines a function called `print_header(msg)`. This should output the value provided by the '`msg`' parameter to the screen (prefixed by five asterisk '`*****`') characters.

Answer:

def print_header(msg): return print(f"*****{msg}")

```
print_header("das")
```

In the answer box below give an example of what the **docstring** may look like for the print_header(msg) function.

Answer:

"""Prints the entered parameter prefixed by 5 asterisks."""

Where within a function definition should a **docstring** appear?

Answer:

A docstring should appear as the first statement of a function.

What statement should appear within a function's code block to cause a specific value to be passed back to the caller of the function?

Answer:

A 'return' statement should appear within a function's code block to pass a specific value to the caller of the function.

Write some Python code that defines a function called find_min(a,b) that returns the smallest of the two given parameter values.

Answer:

```python
def find_min(a,b): return a if a < b else b

print(find_min(4,2))
```

Given the following function definition, which of the *formal parameters* could be described as being a **default argument**?

```
def shouldContinue(prompt, answer=False):
    # function body...
```

Answer:

The answer parameter could be described as a default argument.

Provide two example calls to the above function, one which provides a value for the *default argument*, and one that does not.

Answer:

shouldContinue(prompt)
shouldContinue(prompt, answer=True)

_____

State why following function definition would **not** be allowed.

```
def do_something(prefix="Message", prompt, answer=False):
    # function body...
```

Answer:

The function definition would not be allowed because the formal parameter is passed after the default parameter is passed to the function.

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What single character is placed directly before the name of a *formal parameter*, to indicate that a variable number of actual parameters can be passed when the function is called?

Answer:

An asterisk is placed before the name of a formal parameter to indicate that variable number of parameters can be passed to the function.

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What commonly used built-in function, which displays output on the screen, can take a **variable number** of arguments?

Answer:

print() is a commonly used built-in function that can take a variable number of arguments.

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Is it valid for a function's parameter name to be prefixed by two asterisk characters '`**`' as shown below?

```
def send_output(**details):
    # function body...
```

Answer:

Yes, it is valid for a function's parameter to be prefixed by two asterisk characters.

If present, what does this prefix indicate?

Answer:

This prefix indicates that the function argument is arbitrary.

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What is the name given to a small 'anonymous' function that must be defined using a single expression?

Answer:

Small 'anonymous' functions are called Lambda functions.

Give an example of such a function that calculates the *cube* of a given number (i.e. the value of the number raised to the power of three) -

Answer:

def cube_finder(a): return print(a ** 3)

cube_finder(3)

_____

Exercises are complete

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