# Reference guide: Python concepts from module 2

## Google Cybersecurity Certificate

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## User-defined functions

The following keywords are used when creating user-defined functions.

### def

Placed before a function name to define a function

def greet\_employee():

Defines the greet\_employee() function

def calculate\_fails(total\_attempts, failed\_attempts):

Defines the calculate\_fails() function, which includes the two parameters of total\_attempts and failed\_attempts

### return

Used to return information from a function; when Python encounters this keyword, it exits the function after returning the information

def calculate\_fails(total\_attempts, failed\_attempts):

fail\_percentage = failed\_attempts / total\_attempts

return fail\_percentage

Returns the value of the fail\_percentage variable from the calculate\_fails() function

## Built-in functions

The following built-in functions are commonly used in Python.

### max()

Returns the largest numeric input passed into it

print(max(10, 15, 5))

Returns 15 and outputs this value to the screen

### min()

Returns the smallest numeric input passed into it

print(min(10, 15, 5))

Returns 5 and outputs this value to the screen

### sorted()

Sorts the components of a list (or other iterable)

print(sorted([10, 15, 5]))

Sorts the elements of the list from smallest to largest and outputs the sorted list of [5, 10, 15] to the screen

print(sorted(["bmoreno", "tshah", "elarson"]))

Sorts the elements in the list in alphabetical order and outputs the sorted list of ["bmoreno", "elarson", "tshah"] to the screen

## Importing modules and libraries

The following keyword is used to import a module from the Python Standard Library or to import an external library that has already been installed.

### import

Searches for a module or library in a system and adds it to the local Python environment

import statistics

Imports the statistics module and all of its functions from the Python Standard Library

from statistics import mean

Imports the mean() function of the statistics module from the Python Standard Library

from statistics import mean, median

Imports the mean() and median() functions of the statistics module from the Python Standard Library

## Comments

The following syntax is used to create a comment. (A comment is a note programmers make about the intention behind their code.)

### #

Starts a line that contains a Python comment

# Print approved usernames

Contains a comment that indicates the purpose of the code that follows it is to print approved usernames

### """ (documentation strings)

Starts and ends a multi-line string that is often used as a Python comment; multi-line comments are used when you need more than 79 characters in a single comment

"""

The estimate\_attempts() function takes in a monthly

login attempt total and a number of months and

returns their product.

"""

Contains a multi-line comment that indicates the purpose of the estimate\_attempts() function