Reference guide: Python concepts from module 2

Google Cybersecurity Certificate

Sections

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