Reference guide: Python concepts from module 1

Google Cybersecurity Certificate

Sections

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

Functions

The following functions are commonly used in Python.

`print()`

Outputs a specified object to the screen

> `print("login success")`
> Outputs the string `"login success"` to the screen
>
> `print(9 < 7)`
> Outputs the Boolean value of `False` to the screen after evaluating whether the integer `9` is less than the integer `7`

`type()`

Returns the data type of its input

> `print(type(51.1))`
> Returns the data type of float for the input of `51.1`
>
> `print(type(True))`
> Returns the data type of Boolean for the input of `True`

`range()`

Generates a sequence of numbers

> `range(0, 5, 1)`
> Generates a sequence with a start point of `0`, a stop point of `5`, and an increment of `1`; because the start point is inclusive but the stop point is exclusive, the generated sequence is `0`, `1`, `2`, `3`, and `4`
>
> `range(5)`
> Generates a sequence with a stop point of `5`; when the start point is not specified, it is set at the default value of `0`, and when the increment is not specified, it is set at the default value of `1`; the generated sequence is `0`, `1`, `2`, `3`, and `4`

Conditional statements

The following keywords and operators are used in conditional statements.

`if`

Starts a conditional statement

> `if device_id != "la858zn":`
> Starts a conditional statement that evaluates whether the `device_id` variable contains a value that is not equal to `"la858zn"`
>
> `if user in approved_list:`
> Starts a conditional statement that evaluates if the `user` variable contains a value that is also found in the `approved_list` variable

`elif`

Precedes a condition that is only evaluated when previous conditions evaluate to `False`; previous conditions include the condition in the `if` statement, and when applicable, conditions in other `elif` statements

> `elif status == 500:`
> When previous conditions evaluate to `False`, evaluates if the `status` variable contains a value that is equal to `500`

`else`

Precedes a code section that only evaluates when all conditions that precede it within the conditional statement evaluate to `False`; this includes the condition in the `if` statement, and when applicable, conditions in `elif` statements

> `else:`
> When previous conditions evaluate to `False`, Python evaluates this `else` statement

`and`

Requires both conditions on either side of the operator to evaluate to `True`

> `if username == "bmoreno" and login_attempts < 5:`
> Evaluates to `True` if the value in the `username` variable is equal to `"bmoreno"` and the value in the `login_attempts` variable is less than `5`

`or`

Requires only one of the conditions on either side of the operator to evaluate to `True`

> `if status == 100 or status == 102:`
> Evaluates to `True` if the value in the `status` variable is equal to `100` or the value in the `status` variable is equal to `102`

`not`

Negates a given condition so that it evaluates to `False` if the condition is `True` and to `True` if it is `False`

> `if not account_status == "removed"`
> Evaluates to `False` if the value in the `account_status` variable is equal to `"removed"` and evaluates to `True` if the value is the `account_status` variable is not equal to `"removed"`

Iterative statements

The following keywords are used in iterative statements.

`for`

Signals the beginning of a `for` loop; used to iterate through a specified sequence

> `for username in ["bmoreno", "tshah", "elarson"]:`
> Signals the beginning of a `for` loop that iterates through the sequence of elements in the list `["bmoreno", "tshah", "elarson"]` using the loop variable `username`

> `for i in range(10):`

Signals the beginning of a `for` loop that iterates through a sequence of numbers created by `range(10)` using the loop variable `i`

`while`

Signals the beginning of a `while` loop; used to iterate based on a condition

`while login_attempts < 5:`
Signals the beginning of a `while` loop that will iterate as long as the condition that the value of `login_attempts` is less than `5` evaluates to `True`

`break`

Used to break out of a loop

`continue`

Used to skip a loop iteration and continue with the next one