hello_world.py

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Python Programming with Algorithmic Approach Course

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Teacher

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```
Code is poetry written
        for machines!
```

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Python Collections (Arrays)

There are four collection data types in the Python programming language:

- **List** is a collection which is ordered and changeable. Allows duplicate members.
- **Tuple** is a collection which is ordered and unchangeable. Allows duplicate members.
- **Set** is a collection which is unordered, unchangeable*, and unindexed. No duplicate members.
- **Dictionary** is a collection which is ordered** and changeable. No duplicate members.

*Set items are unchangeable, but you can remove and/or add items whenever you like.

**As of Python version 3.7, dictionaries are ordered. In Python 3.6 and earlier, dictionaries are unordered.

List

Lists are used to store multiple items in a single variable.

Lists are one of 4 built-in data types in Python used to store collections of data, the other 3 are Tuple, Set, and Dictionary, all with different qualities and usage.

Syntax:
```
list_name = [item_0, item_1, item_2, … , item_n]
```

```python
mylist = ["apple", "banana", "cherry"]
mylist = [1, 2, 3]
mylist = [3.14, 2, "mmd", [-1 , 0], True]
```

Tuple

Tuples are used to store multiple items in a single variable.

Tuple is one of 4 built-in data types in Python used to store collections of data, the other 3 are List, Set, and Dictionary, all with different qualities and usage.
A tuple is a collection which is ordered and <u>unchangeable</u>.

Syntax:
```
tuple_name = (item_0, item_1, item_2, … , item_n)
```

```
my_tuple = ("apple", "banana", "cherry")
my_tuple = (1, 2, 3)
my_tuple = (3.14, 2, "mmd", (-1 , 0), True)
```

Sets are used to store multiple items in a single variable.

Set is one of 4 built-in data types in Python used to store collections of data, the other 3 are List, Tuple, and Dictionary, all with different qualities and usage.

A set is a collection which is unordered, unchangeable*, and unindexed.

Syntax:
```python
set_name = {item_1, item_2, … , item_n}
```


```python
my_set = {"apple", "banana", "cherry"}
my_set = {1, 2, 3)
my_set = {3.14, 2, "mmd", {-1 , 0}, True}
```

Dictionary

Dictionaries are used to store data values in **key:value** pairs.

A dictionary is a collection which is ordered*, changeable and do not allow duplicates.

* As of Python version 3.7, dictionaries are ordered. In Python 3.6 and earlier, dictionaries are unordered.

Syntax:
```
dict_name = {key1: value1, key2: value2, … , key_n: value_n}
```

```python
my_dict = {
  "brand": "Ford",
  "model": "Mustang",
  "year": 1964
}
```

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Python has two primitive loop commands:

- **while** loops
- **for** loops
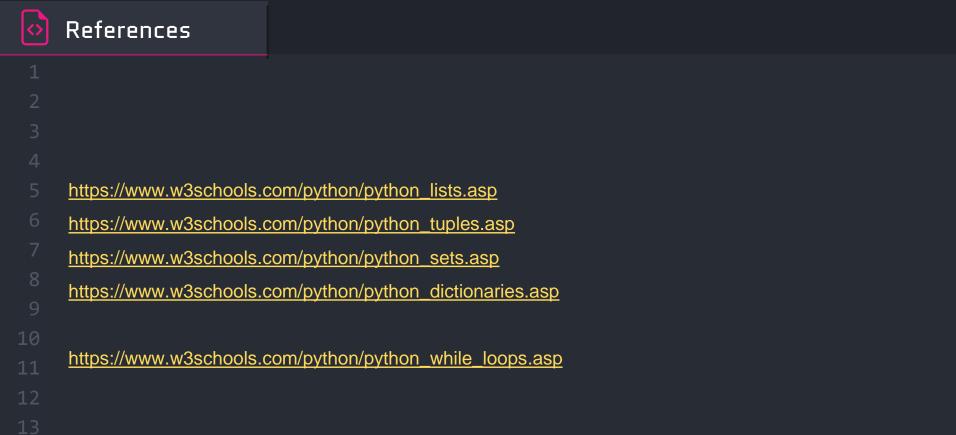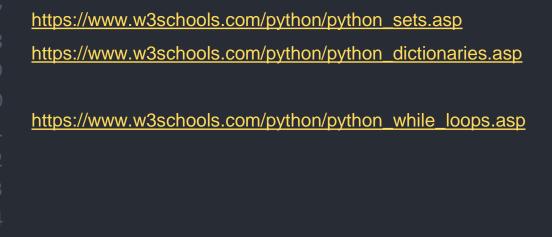
While Loop

With the while loop we can execute a set of statements as long as a condition is true.

Syntax:
```
while condition:
    # Code
```

```python
i = 1
while i <= 10:
  print(i)
  i += 1
```

1

2

3

4

5 https://www.w3schools.com/python/python_lists.asp

6 https://www.w3schools.com/python/python_tuples.asp

7 https://www.w3schools.com/python/python_sets.asp

8 https://www.w3schools.com/python/python_dictionaries.asp

9

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11 https://www.w3schools.com/python/python_while_loops.asp

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THANKS!

Do you have any questions?

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