Python Storing Collections of Data

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| **Item** | **Features** |  |
| Variables | Variables store a single value  Variable can be one data type at a time, can change  Variable types can be specified (casted) or implies  Casting is an example of constructor functions  Variable can be printed  Can print math statements  Variables support many types  Text Type: str  Numeric Types: int, float, complex  Sequence Types: list, tuple, range  Mapping Type: dict  Set Types: set, frozenset  Boolean Type: bool  Binary Types: bytes, bytearray, memoryview  Variable names are case-sensitive  Strings in python are surrounded by either single quotation marks, or double quotation marks.  position 2 to position 5 (not included): | x = 4       # x is of type int x = "Sally" # x is now of type str  x = str(3)    # x will be '3' y = int(3)    # y will be 3 z = float(3)  # z will be 3.0  z = 1j   # complex  x = dict(name="John", age=36)  x = set(("apple", "banana", "cherry"))  x = "awesome" print("Python is " + x)  x = 5 y = 10 print(x + y)  print("Hello") print('Hello')  b = "Hello, World!" print(b[2:5]) |
| List | Lists are used to store multiple items in a single variable  List items are ordered, changeable, and allow duplicate values.  List items are indexed, the first item has index [0], the second item has index [1] etc.  new items will be placed at the end of the list.  List items can be of any data type  A list can contain different data types  lists are defined as objects with the data type 'list' | x = ["apple", "banana", "cherry"]  list1 = ["apple", "banana", "cherry"] list2 = [1, 5, 7, 9, 3] list3 = [True, False, False]  list1 = ["abc", 34, True, 40, "male"]  print (list1[0]) # print first item  print (list1[1]) # print second item  print (list1[-1]) #last item  print (list1[2:4]) # print 3 to 5 |
| Tuple | collection which is ordered and unchangeable. Allows duplicate members. | x = ("apple", "banana", "cherry") |
| Set | collection which is unordered, unchangeable\*, and unindexed. No duplicate members. | x = {"apple", "banana", "cherry"} |
| Dictionary | collection which is ordered\*\* and changeable. No duplicate members. | x = {"name" : "John", "age" : 36} |
| Array | Python Collection. In most cases a list |  |

Python Reference

[Python Overview](https://www.w3schools.com/python/python_reference.asp)

[Python Built-in Functions](https://www.w3schools.com/python/python_ref_functions.asp)

[Python String Methods](https://www.w3schools.com/python/python_ref_string.asp)

[Python List Methods](https://www.w3schools.com/python/python_ref_list.asp)

[Python Dictionary Methods](https://www.w3schools.com/python/python_ref_dictionary.asp)

[Python Tuple Methods](https://www.w3schools.com/python/python_ref_tuple.asp)

[Python Set Methods](https://www.w3schools.com/python/python_ref_set.asp)

[Python File Methods](https://www.w3schools.com/python/python_ref_file.asp)

[Python Keywords](https://www.w3schools.com/python/python_ref_keywords.asp)

[Python Exceptions](https://www.w3schools.com/python/python_ref_exceptions.asp)

[Python Glossary](https://www.w3schools.com/python/python_ref_glossary.asp)