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CS3C

Lists  
▪ Defining a List

> Multiple items can be stored in a single variable using lists.

One of the four built-in data types in Python that can be used to store collections of data is a list; the other three, dictionary, set, and tuple, have various properties and applications.

Code Example:

thislist = ["apple", "banana", "cherry"]

print(thislist)

▪ List Syntax

> Square brackets "[ ]" are used to enclose comma-separated entries in Python lists.

Code Example:

my\_list = [1, 2, 3, 4, 5]

▪ Accessing List Elements

> An element in a list can be retrieved by using its index, which starts at 0.

Code Example:

my\_list = [1, 2, 3, 4, 5]

print(my\_list[0]) # Output: 1

▪ Loop through a List

> With a loop, like a "for" loop, you can iterate over a list.

Code Example:

my\_list = [1, 2, 3, 4, 5]

for item in my\_list:

print(item)

▪ List Length

> The length of a list can be obtained using the “len()” function.

Code Example:

my\_list = [1, 2, 3, 4, 5]

print(len(my\_list)) # Output: 5

▪ Add Items in the List

> Items can be added to the end of a list using the “append()” method.

Code Example:

my\_list = [1, 2, 3, 4, 5]

my\_list.append(6)

print(my\_list) # Output: [1, 2, 3, 4, 5, 6]

▪ Remove Item from a List

> Items can be removed from a list using the “remove()” method by specifying the value to remove.

Code Example:

my\_list = [1, 2, 3, 4, 5]

my\_list.remove(3)

print(my\_list) # Output: [1, 2, 4, 5]

▪ The List () Constructor

> The “list()” constructor can be used to create a new list from an iterable object.

Code Example:

my\_list = list(range(5))

print(my\_list) # Output: [0, 1, 2, 3, 4]

▪ List Methods

> Python lists have various built-in methods for performing common operations such as sorting, appending, and removing elements.

Code Example:

my\_list = [3, 1, 2, 4, 5]

my\_list.sort()

print(my\_list) # Output: [1, 2, 3, 4, 5]

▪ Nested Lists

> A nested list is a list that contains other lists as its elements.

Code Example:

nested\_list = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]

print(nested\_list[0][1]) # Output: 2