[List Manipulation in Python](http://www.pythonforbeginners.com/lists/python-list-manipulation/)

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Tags: [Lists](http://www.pythonforbeginners.com/tag/lists/)

Overview

List is one of the simplest and most important data structures in Python.

Lists are enclosed in square brackets [ ] and each item is separated by a comma.

Lists are collections of items where each item in the list has an assigned index

value.

A list is mutable, meaning you can change its contents.

Lists are very ﬂexible and have many built-in control functions.

Methods of List objects

Calls to list methods have the list they operate on appear before the method

name separated by a dot, e.g. L.reverse()

Creation

|  |  |
| --- | --- |
| 1  2  3  4 | L = ['yellow', 'red', 'blue', 'green', 'black']    >>>print L  returns: ['yellow', 'red', 'blue', 'green', 'black'] |

Accessing / Indexing

|  |  |
| --- | --- |
| 1 | L[0]  = returns 'yellow' |

Slicing

|  |  |
| --- | --- |
| 1  2  3  4  5 | L[1:4]  = returns ['red', 'blue', 'green']  L[2:]   = returns ['blue', 'green', 'black']  L[:2]   = returns ['yellow', 'red']  L[-1]   = returns 'black'  L[1:-1] = returns ['red', 'blue', 'green'] |

Length - number of items in list

|  |  |
| --- | --- |
| 1 | len(L)  = returns 5 |

Sorting - sorting the list

|  |  |
| --- | --- |
| 1 | sorted(L) = returns ['black', 'blue', 'green', 'red', 'yellow'] |

Append - append to end of list

|  |  |
| --- | --- |
| 1  2  3  4 | L.append("pink")    >>> print L  returns: ['black', 'blue', 'green', 'red', 'yellow', 'pink'] |

Insert - insert into list

|  |  |
| --- | --- |
| 1  2  3  4 | L.insert(0, "white")    >>> print L  returns: ['white', 'black', 'blue', 'green', 'red', 'yellow', 'pink'] |

Extend - grow list

|  |  |
| --- | --- |
| 1 | L.extend(L2) |

Remove - remove first item in list with value "white"

|  |  |
| --- | --- |
| 1  2  3  4 | L.remove("white")    >>> print L  returns: ['black', 'blue', 'green', 'red', 'yellow', 'pink'] |

Delete

Remove an item from a list given its index instead of its value

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| --- | --- |
| 1  2  3  4 | del.L[0]    >>> print L  ['blue', 'green', 'red', 'yellow', 'pink'] |

Pop

Remove last item in the list

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| --- | --- |
| 1  2  3  4 | L.pop()  = returns 'pink'    # remove indexed value from list  L.pop(1) = returns 'green' |

Reverse - reversing the list

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| --- | --- |
| 1 | L.reverse() |

Count

Search list and return number of instances found

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| --- | --- |
| 1 | L.count('red') |

Keyword "in" - can be used to test if an item is in a list

|  |  |
| --- | --- |
| 1  2 | if 'red' in L:      print "list contains", 'red' |

For-in statement - makes it easy to loop over the items in a list

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| --- | --- |
| 1  2  3  4  5  6 | for item in L:      print item    L = ['red', 'blue', 'green']  for col in L:      print col |