

Lists

Lesson Outcomes:

1. Know what a list is
2. access items within a list by index
3. reassign a value in a list
4. `.append()` to add items to a list
5. slice a list
6. `.index()` to search for the index of an item in a list
7. `.insert()` to insert a value at an index
8. `.remove()` to remove items from a list
9. `.pop()` to remove and return an item from a list

What is a list?

```
# listForm = [first, second, third, etc]
```

```
example1 = ["eggs", 1, "spam", 7.96]
```

```
example2 = ["green", "yellow", "blue"]
```

```
example3 = [] # empty list
```

Accessing by index

```
# accByIndex = nameOfList[index of value accessed]
```

```
byIndex = ["green", "eggs", "and", "ham"]
```

```
# ham = "ham"
```

```
ham = byIndex[3]
```

```
# greenEggs = "green eggs"
```

```
greenEggs = byIndex[0] + " " + byIndex[1]
```

Index Re-Assignment

```
reAssign = [1, 1, 3, 8]
```

```
# re-assigns reAssign[2] the value 5
```

```
reAssign[2] = 5
```

```
# now, reAssign = [1, 1, 5, 8]
```

.append()

```
# nameOfList.append(value)
```

```
adder = [1, 2, 3, 4]
```

```
# appends 5 to the end of adder
```

```
adder.append(5)
```

```
# now, adder = [1, 2, 3, 4, 5]
```

list slicing

```
sliceEx = [9, 0, 2, 1, 0]
```

```
# slice1 = [9, 0]
```

```
slice1 = sliceEx[:2]
```

```
# slice2 = [2, 1]
```

```
slice2 = sliceEx[2:4]
```

```
# slice3 = [0, 2, 1, 0]
```

```
slice3 = sliceEx[1:]
```

.index()

```
indexed = [0, 1, 0, 1, 1]
```

```
# firstZero = 0
```

```
firstZero = indexed.index(0)
```


.insert()

```
inserted = ["Through", "Looking", "Glass"]
```

```
# inserts "the" at index 1 of inserted
```

```
inserted.insert(1, "the")
```

```
# now, inserted = ["Through", "the", "Looking", "Glass"]
```

.remove()

```
removed = ["Ned Stark", "Catelyn Stark", "Tony Stark", "Bran Stark"]
```

```
# removes "Tony Stark" from removed
```

```
removed.remove("Tony Stark")
```

```
# now, removed = ["Ned Stark", "Catelyn Stark", "Bran Stark"]
```

.pop()

```
popped = ["Foo Fighters", "Nirvana", "Green Day", "The White Stripes"]
```

```
# removes "Green Day" from popped and assigns it to a variable
```

```
noDaveGrohl1 = popped.pop(2)
```

```
# now, popped = ["Foo Fighters", "Nirvana", "The White Stripes"]
```

```
# removes "The White Stripes" from popped and assigns it to a variable
```

```
noDaveGrohl2 = popped.pop()
```

```
# now, popped = ["Foo Fighters", "Nirvana"]
```

Recap

1. List datatype
2. access items within a list by index
3. reassign a value in a list
4. how to use `.append()` to add items to a list
5. how to slice a list
6. how to use `.index()` to search for the index an item in a list
7. how to use `.insert()` to insert a value at an index
8. use `.remove()` to remove items from a list
9. how to use `.pop()` to remove and return an item from a list



What's Next?