

3_lists

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Definition

```
language-python
```

```
# List is a collection of items in certain order enclosed by"[]"
family=['mom', 'dad', 'me']
print(family)
# ['mom', 'dad', 'me']
```

Access elements

```
language-python
```

```
# as they are in certain order, just pick it with order#, but start from zero
family=['mom', 'dad', 'me']
print(family[0])
```

```
#mom
print(family[-1])
#me
# if 0 is the first item, the last one is -1
```

Change, add, remove

Change

```
language-python

subjects=['psych','philos','econ']
subjects[1]='math'
print(subjects[1])
#math
```

Add

append

```
language-python

life=[]
life.append('partner')
print(life[0])
#partner
```

Insert

```
language-python

life=['partner','work']
life.insert(2,'belief')
print(life)
#[ 'partner', 'work', 'belief' ]
```

Remove

Del

```
language-python
```

```
life=['partner','work']  
del life[1]  
print(life)  
#['partner']
```

Pop()

```
language-python
```

```
#it removes the last one and save the last one for futher use  
life=['partner','work']  
passed_life=life.pop(1)  
print(passed_life)  
#work  
print(life)  
#['partner']
```

Remove value

```
language-python
```

```
money=['rmb','dollar','ruby','pounds']  
history_money='pounds'  
money.remove(history_money)  
print(f"{history_money} has become history")  
#pounds has become history
```

Organizing list

Sorting

```
language-python
```

```
# sorting alphabetically  
scientist=['newton','einstein','boer']  
scientist.sort()  
print(scientist)  
#['boer','einstein','newton']  
  
# reversed alphabetically
```

```
scientist.sort(reverse=True)
print(scientist)
#['newton', 'einstein', 'boer']

# temporarily sorting
print(sorted(scientist))
#['boer', 'einstein', 'newton']
print(scientist)
#['newton', 'einstein', 'boer']

# temporarily reversed alphabetical
cities = ['paris', 'beijing', 'tokyo', 'shanghai']
print(sorted(cities, reverse=True))
# ['tokyo', 'shanghai', 'paris', 'beijing']

# reverse order
list_1=['1','3','2','4']
list_1.reverse()
print(list_1)
#['4', '2', '3', '1']
```

Length

```
language-python
```

```
# find the length, useful in many games
list_1=['1','3','2','4']
len(list_1)
#4
```