Lists and Tuples

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Exercise 1: is, and equals

```
a = [1, 3, 5, 7, 9]
b = [1, 3, 5, 7, 9]

c = 1
d = 1

print(a == b)
print(a is b)

print(c == d)
print(c is d)
```

Exercise 2: Creating and modifying

```
import copy

srimp2 = ["I", "am", "the", "way,", "the", "truth,", "and", "the", "life.", "No", "one",
    "comes", "to", "the", "father", "except", "through", "-", "$6", "SRIMP", "SPECIAL!"]

# If you're doing it textbook style, you can use srimp3 = srimp2.copy() instead.
srimp3 = copy.deepcopy(srimp2)

for word in srimp2:
    print(word, end = " ")

srimp3[0] = "You"

for word in range(0, len(srimp3)):
    print(srimp3[word], end = " ")

print(srimp2[0:])
```

Exercise 3: References and index/slicing

Create a variable named even_numbers with the contents [2, 4, 6, 8, 10].

Create a variable named even_reference with the value of even_numbers.

Create a variable named even_deepcopy using the copy library's deepcopy(data_here) function or the .copy() method to duplicate even_numbers.

Change the first value of even_numbers to 12.

Change the second value of even_deepcopy() to 12.

Use a for or while loop to print the first three numbers of even_reference.

Use slicing to print a list of the first three numbers of even_deepcopy.

Exercise 4: Nested Lists

```
milk2 = ["milk", "milk", "milk", "milk",["milk", "milk", "milk", "milk",[None], "milk", "milk"
    , "milk", "milk"], "milk", "milk", "milk","milk"]
print(milk2)
print(milk2[4])
print(milk2[4][4][0])
```

Exercise 5: List Comprehension

```
milk2 = ["milk", "milk", "milk", "milk",["milk", "milk", "milk", "milk",[None], "milk", "milk"
    , "milk", "milk"], "milk", "milk", "milk","milk"]


print([milk for milk in milk2 if milk == "milk"])
print([milk for milk in milk2])
```

Exercise 6: Common list tools

```
milk2 = ["milk", "milk", "milk", "milk",["milk", "milk", "milk", "milk",[None], "milk",
    "milk", "milk", "milk"], "milk", "milk", "milk","milk"]

orange_juice = ["orange juice", "orange juice", "orange juice", "orange juice", "orange
    juice"]

number_salad = [7, 3, 5]
number_salad.sort()
print(number_salad)
milk2 = milk2 + orange_juice + number_salad
milk2.append("soda")
milk2.remove("milk")

milk2[0] = "sauce"
del milk2[3][4]
print(milk2)
```

Exercise 7: Tuples

```
family = (("brother", 16), ("sister", 16), ("mom", 42),
    ("dad", 42))

print(family[2][1])
```

Exercise 8: Nested list work

Create a variable named “student” with the value [].

Append the list [“Grug”, “ggg666”, 99999999] to student.

Remove 99999999 from the Grug list.

Delete the value at index 1 from the Grug list.

Append the list [“Jerry”, “jjj111”, 11111111] to student.

Use a list comprehension to print every value of student.

Create a variable named “even_numbers” with the tuple (2, 4, 6, 8, 10).

Try to apply the .sort() method on it.

Exercise 9: Mutability

Is a list a mutable object? Is a tuple?