KEY_Practice06_2D_Lists_Intro

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1 Practice with 2D lists!

Remember: * Lists can be used to group different values together - it's just a collection of things. * You can make a list in Python by putting different things in a box of brackets `[]` separated by commas. * 2D lists are lists of lists

First, make a list of land animals including cat, dog, elephant, and any other land animals you want to include. Store it in the variable `land`:

[1]:
```
# command Python to make a list of land animals including dog, cat, and␣
 ↪elephant. Store it in land
land = ['cat','dog','elephant']

# command Python to print land
print(land)
```

```
['cat', 'dog', 'elephant']
```

Second, make a list of aquatic animals including fish, seahorse, and whale. Store it in the variable `aquatic`:

[2]:
```
# command Python to make a list of aquatic animals including fish, seahorse,␣
 ↪and whale. Store it in aquatic
aquatic = ['fish','seahorse','whale']

# command Python to print aquatic
print(aquatic)
```

```
['fish', 'seahorse', 'whale']
```

How many things are in your `land` list? How about your `aquatic` list?

[3]:
```
# command Python to print the length of land
print(len(land))

# command Python to print the length of aquatic
print(len(aquatic))
```

```
3
3
```

Okay, time to make a 2D list! Combine land and aquatic into a 2D list called `animals`:

[4]:
```
# command Python to make a 2D list of animals that contains land and aquatic
animals = [land, aquatic]

# commadn Python to print animals
print(animals)
```

```
[['cat', 'dog', 'elephant'], ['fish', 'seahorse', 'whale']]
```

Now, create another list called `air` and include robin, cardinal, and bat.

[0]:
```
# command Python to make a list called air
air = ['robin','cardinal','bat']
```

Add air to your 2D animals list.

[6]:
```
# command Python to add air to your animals list
animals.append(air)

# command Python to print animals
print(animals)

# command Python to find the length of animals
len(animals)
```

```
[['cat', 'dog', 'elephant'], ['fish', 'seahorse', 'whale'], ['robin',
'cardinal', 'bat']]
```

[6]:
```
3
```

Challenge: Make a 2D list of numbers from 1 to 20 where the odd numbers are in the first list and the even numbers are in the second list

[7]:
```
# make 2D list of numbers
odd = [1,3,5,7,9,11,13,15,17,19]
even = [2,4,6,8,10,12,14,16,18,20]
all_nums = [odd,even]
# print out 2D list of numbers to see if you did it right!
print(all_nums)
```

```
[[1, 3, 5, 7, 9, 11, 13, 15, 17, 19], [2, 4, 6, 8, 10, 12, 14, 16, 18, 20]]
```

Now add your animals list and your numbers list together, print it out, and find the length!

[8]:
```
# add your animals list and your numbers list together
both_lists = animals + all_nums
# print new list
print(both_lists)
# find length of new list
```

```
len(both_lists)
```

```
[['cat', 'dog', 'elephant'], ['fish', 'seahorse', 'whale'], ['robin',
'cardinal', 'bat'], [1, 3, 5, 7, 9, 11, 13, 15, 17, 19], [2, 4, 6, 8, 10, 12,
14, 16, 18, 20]]
```

[8]: 5

Nice job! You just practiced: * Making a 2D list (a list of lists) * Finding the length of a 2D list (len) * Adding 2D lists together (+) * Adding things to a 2D list (.append)