KEY_Practice07_2D_Lists_Indexing

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1 Practice with 2D list indexing!

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 * You can double-index 2D lists to get an element from the sub-list

Let's use our list of animals:

[1]:
```
# command Python to make a list of animals
animals = [['cat','dog','elephant'],
           ['fish','seahorse','whale'],
           ['robin', 'cardinal', 'bat']]

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

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

Get the aquatic animals from your list:

[2]:
```
# command Python to get aquatic animals from your list
animals[1]
```

[2]:
```
['fish', 'seahorse', 'whale']
```

What if you want to get seahorse from animals?

[3]:
```
# command Python to get seahorse from animals
animals[1][1]
```

[3]:
```
'seahorse'
```

How about getting elephant from the animals list?

[4]:
```
# command Python to get elephant from animals
animals[0][2]
```

[4]:
```
'elephant'
```

Now create a list of your favorite land, aquatic, and air animals by subsetting the `animals` list. Call this list favorites and print it out to see if you indexed corretcly:

[5]:
```
# command Python to make a list called favorites with your favorite of each␣
 ↪animal
favorites = [animals[0][2],animals[1][2],animals[2][2]]
# command Python to print favorites
print(favorites)
```

```
['elephant', 'whale', 'bat']
```

Challenge: Using your 2D list of numbers from 1 to 20 get the even numbers from the list:

[6]:
```
# make 2D list of numbers
numbers = [[1,3,5,7,9,11,13,15,17,19],
           [2,4,6,8,10,12,14,16,18,20]]
# get the even numbers from numbers
print(numbers[1])
```

```
[2, 4, 6, 8, 10, 12, 14, 16, 18, 20]
```

Now get your age from the list of numbers:

[7]:
```
# get your age from numbers and save it to age
age = numbers[0][7]
# print age to see if you did it correctly
print(age)
```

```
15
```

Add 5 to your age and save it to age_plus_5. What do you think you'll be doing in 5 years?

[8]:
```
# add 5 to your age
age_plus_5 = age + 5
# print age_plus_5
print(age_plus_5)
```

```
20
```

Now add 5 to age_plus_5 and save it to the variable age_plus_10. What do you think you'll be doing in 10 years?

[9]:
```
# add 5 to age_plus_10
age_plus_10 = age_plus_5 + 5
# print age_plus_10
print(age_plus_10)
```

```
25
```

Nice job! You just practiced: * Indexing a 2D list (a list of lists) * Making a new list from a subset of a 2D list * Saving things to variables * Adding variables and numbers