

EXERCISES: DICTIONARIES

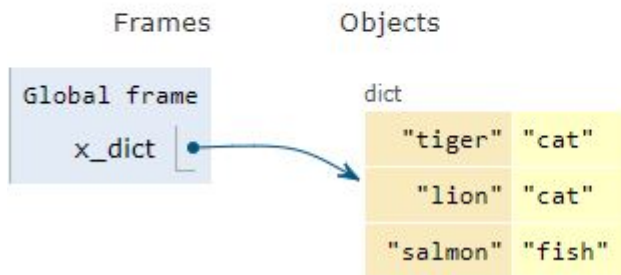
- print keys, values and items from *x_dict*:

```
x_dict={"tiger" : "cat",  
        "lion"  : "cat",  
        "salmon": "fish"}
```

Solution:

```
x_dict={"tiger" : "cat",  
        "lion"  : "cat",  
        "salmon": "fish"}  
  
print("keys: ", x_dict.keys())  
print("values: ", x_dict.values())  
print("items: ", x_dict.items())
```

```
keys: dict_keys(['tiger', 'lion', 'salmon'])
values: dict_values(['cat', 'cat', 'fish'])
items: dict_items([('tiger', 'cat'), ('lion', 'cat'), ('salmon', 'fish')])
```

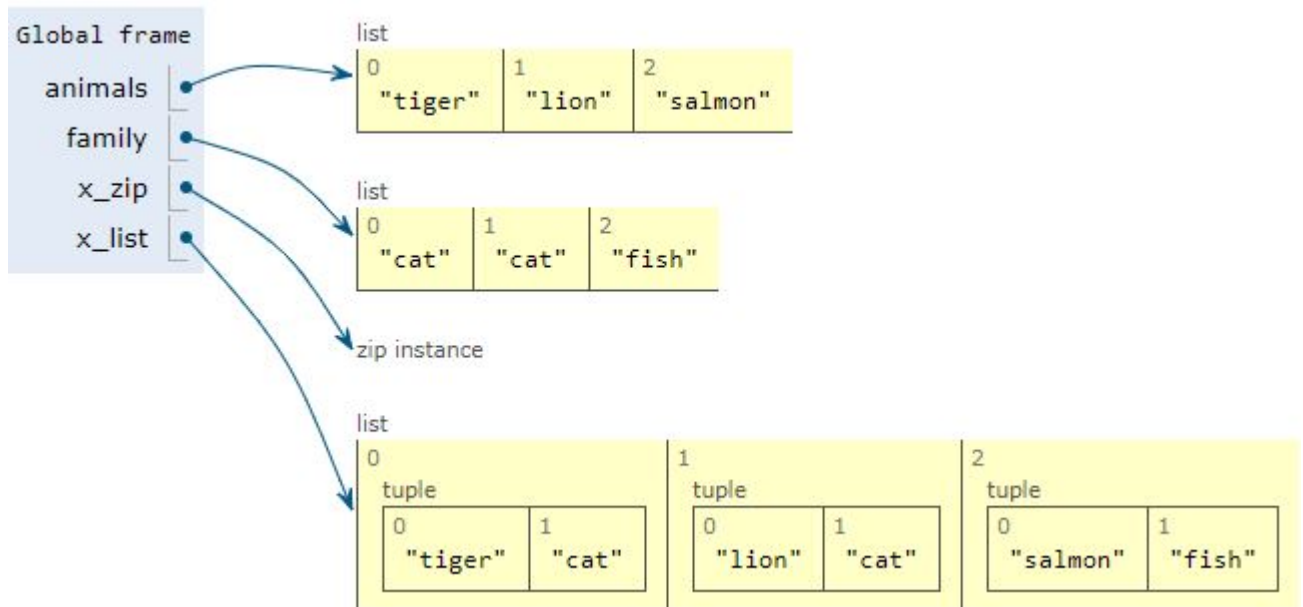


- use *zip*() to construct the following *x_list*:

```
x_list=[("tiger","cat"),
        ("lion","cat"),
        ("salmon","fish")]
```

Solution:

```
animals = ["tiger","lion","salmon"]
family  = ["cat", "cat", "fish"]
x_zip   = zip(animals, family)
x_list  = list(x_zip)
```

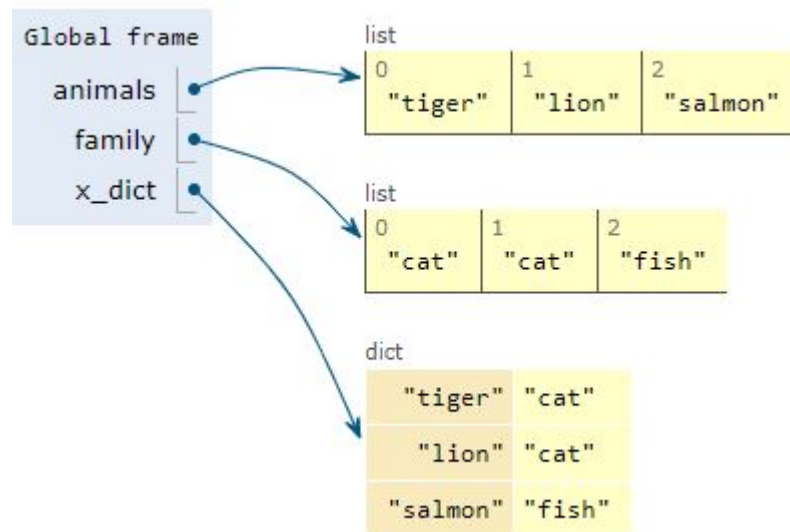


- use *zip()* to construct the following *x_dict*:

```
x_dict = {"tiger": "cat",  
          "lion"  : "cat",  
          "salmon": "fish"}
```

Solution:

```
animals = ["tiger", "lion", "salmon"]  
family  = ["cat", "cat", "fish"]  
x_dict  = dict(zip(animals, family))
```

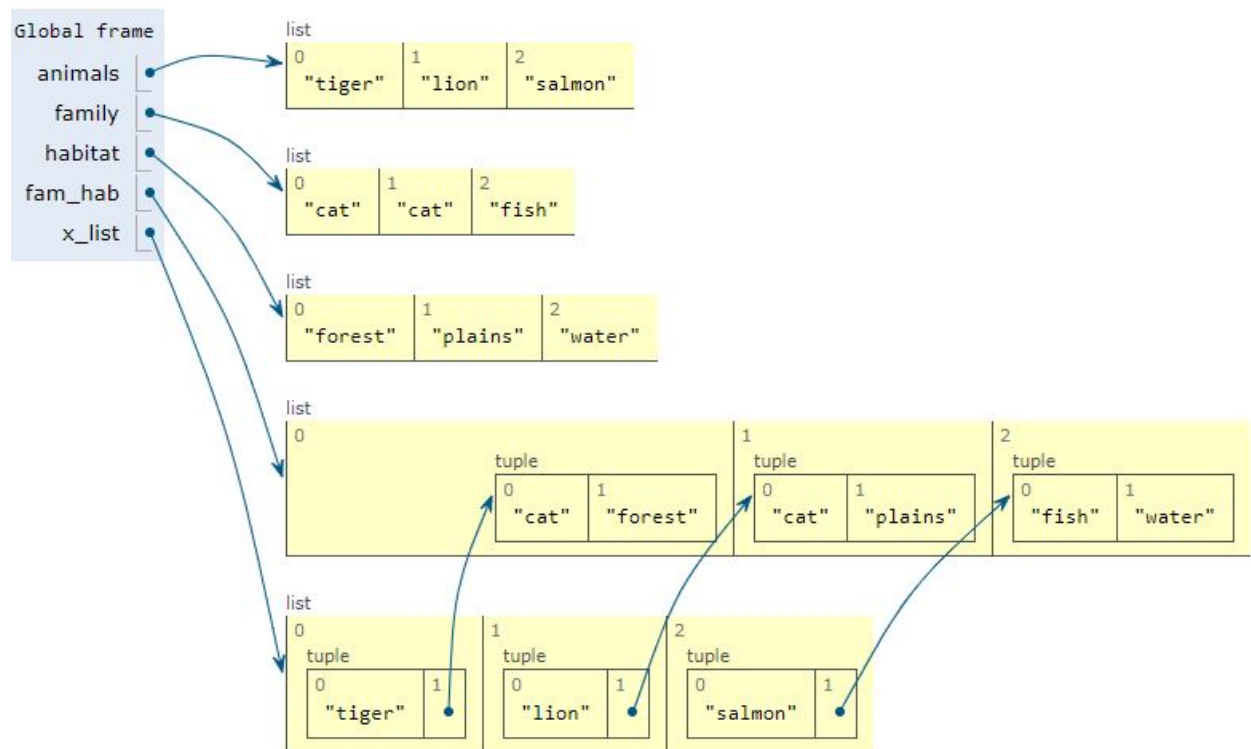


- use *zip()* to construct the following *x_list*:

```
x_list=[("tiger", ("cat", "forest")),  
        ("lion", ("cat", "plains")),  
        ("salmon", ("fish", "water"))]
```

Solution:

```
animals = ["tiger", "lion", "salmon"]  
family  = ["cat", "cat", "fish"]  
habitat = ["forest", "plains", "water"]  
  
fam_hab = list(zip(family, habitat))  
x_list  = list(zip(animals, fam_hab))
```

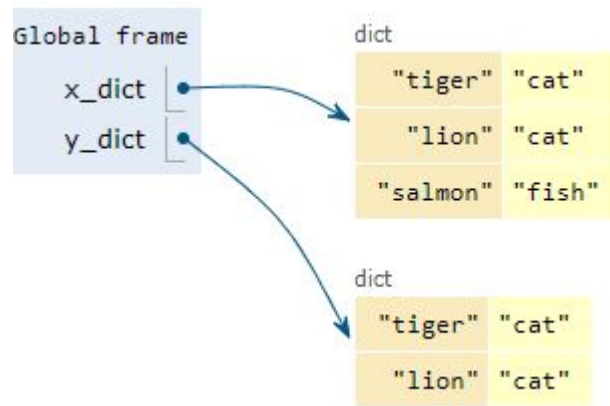



- use comprehension to construct dictionary y_dict from x_dict containing value *"cat"*:

```
x_dict = {"tiger": "cat",  
          "lion": "cat",  
          "salmon": "fish"}  
y_dict = {"tiger": "cat",  
          "lion": "cat"}
```

Solution:

```
x_dict = {"tiger": "cat",  
          "lion": "cat",  
          "salmon": "fish"}  
  
y_dict = {k:v for k,v in x_dict.items()  
          if v=="cat"}
```



- show two ways to add item (*"eagle", "bird"*) to *x_dict*:

```
x_dict = {"tiger": "cat",  
          "lion": "cat",  
          "salmon": "fish"}
```

Solution:

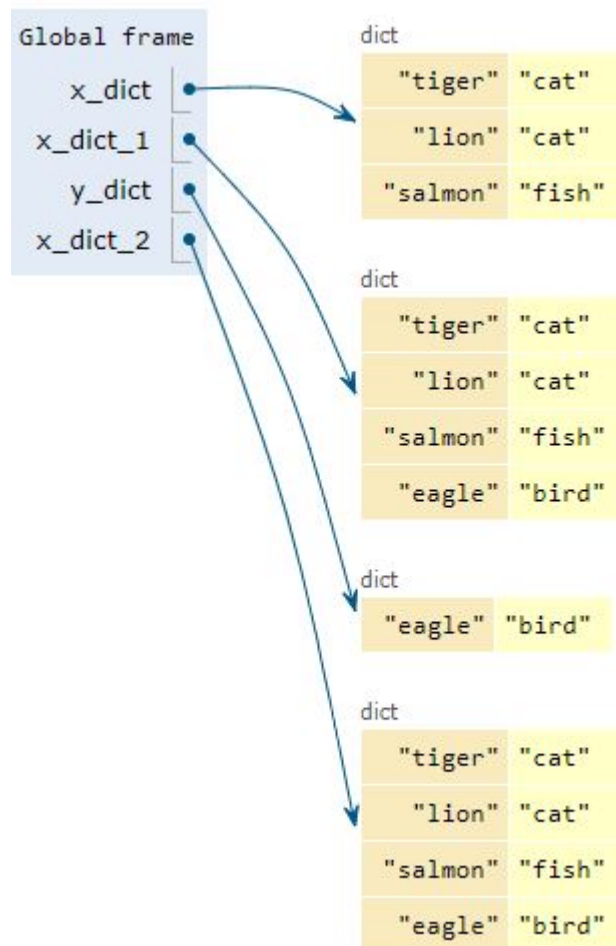
```
x_dict = {"tiger": "cat",  "lion": "cat",  
          "salmon": "fish"}
```

```
# first way
```

```
x_dict_1 = x_dict.copy()  
y_dict = {"eagle" : "bird"}  
x_dict_1.update(y_dict)
```

```
#second way
```

```
x_dict_2 = x_dict.copy()  
x_dict_2["eagle"] = "bird"
```



- show 2 ways to print values for key *"lion"* in *x_dict*:

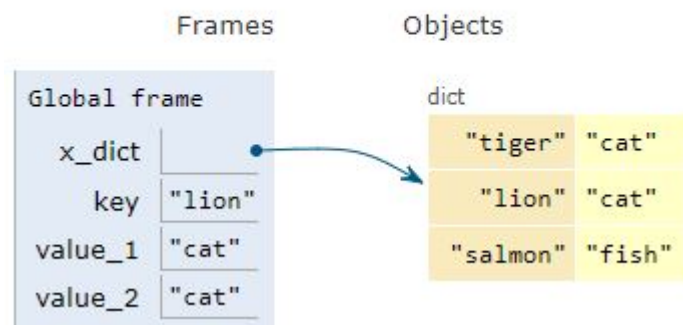
```
x_dict = {"tiger": "cat",  
          "lion": "cat",  
          "salmon": "fish"}
```

Solution:

```
x_dict = {"tiger": "cat", "lion": "cat",  
          "salmon": "fish"}  
key = "lion"  
  
# set value to None if not in dictionary  
# first way:  
if key in x_dict.keys():  
    value_1 = x_dict[key]  
    print("(1-st method) key: ", key,  
          " value: ", value_1)  
else:  
    value = None
```

```
# second way
value_2 = x_dict.get(key, None)
print("(2-nd method) key: ", key,
      " value: ", value_2)
```

```
(1-st method)key: lion value: cat
(2-nd method) key: lion value: cat
```



- print all keys in *x_dict* for value *"cat"*:

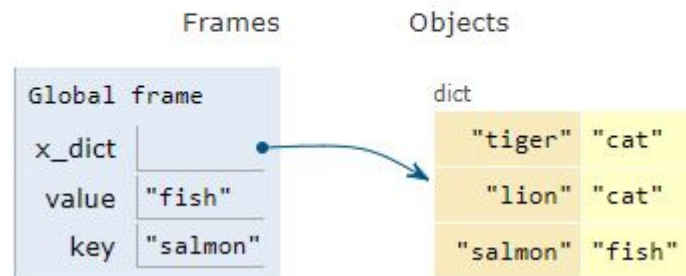
```
x_dict = {"tiger": "cat",  
          "lion": "cat",  
          "salmon": "fish"}
```


Solution:

```
x_dict = {"tiger": "cat", "lion": "cat",  
          "salmon": "fish"}  
value = "cat"
```

```
for key in x_dict.keys():  
    value = x_dict[key]  
    if value == "cat":  
        print("next key: ", key)
```

```
next key: tiger  
next key: lion
```



- remove item with key *”lion”* from *x_dict*:

```
x_dict={"tiger" : "cat",  
        "lion"  : "cat",  
        "salmon": "fish"}
```

Solution:

```
x_dict={"tiger" : "cat", "lion"  : "cat",  
        "salmon": "fish"}  
x_copy = x_dict.copy()  
  
key = "lion"  
if key in x_dict.keys():  
    value = x_dict.pop(key)
```

