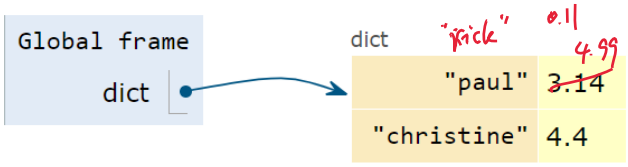
Dictionary – part 2

```
dict = {"paul":3.14, "christine": 4.40}
```

key value

Frames Objects



"rick" 0.11 4.99

`dict[key name]` gives the value

dict("paul") = 4.99 dict("rick") = 0.11

```
dict[key name] = value #can be update or new insert
```

for if

`key in dict` will return `True or False`

`len(dict)`: gives the number of pairs

Coding challenge

Write a function that takes in an image and returns the frequency of different pixel colors in the picture as a dictionary. For example, if you are given the following image,

```
[[(255, 255, 255), (255, 255, 255), (0, 0, 0), (0, 0, 0), (0, 0, 0)],
 [(255, 255, 255), (255, 255, 255), (0, 0, 0), (0, 0, 0), (0, 0, 0)],
 [(0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0)],
 [(0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0)],
 [(0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0), (0, 0, 0)]]
```

your code should return

```
{(255, 255, 255): 4, (0, 0, 0):21}
```

```
def color_freq_count(img):
  # write code here
```

create empty dictionary
go through 2D grid
if tuple is in
increment value
else insert tuple w/ value as 1
return dict

Which among the following *cannot* be used as keys in a dictionary?

A) only lists

B) only tuples

C) only dictionaries

D) both lists and dictionaries

E) None of them. Everything can be keys

What will be printed?

```
city_to_loc = {}
city_to_loc["San Diego"] = (32.715736, -117.161087)
city_to_loc["Madison"] = (43.073051, -89.401230)
city_to_loc["Chennai"] = (13.082680, 80.270721)
print(city_to_loc["Madison"][1])
```

A) (43.073051, -89.401230)

B) 43.073051

C) -89.401230

D) Error: Key ["Madison"][1] not found in the dictionary

2. List of dictionaries

- Each element in a list is a dictionary
- You see this type of hierarchy quite often in practice.
  - Just go from the highest to the lower hierarchy

```
words = [{"foo":1, "bar":2}, {"paul":"prof", "Hannah":"tutor"}]
```

What is `words[1]["paul"]`

A. "prof"
B. error
C. 1
D. 2
E. "tutor"

Which statement is correct to add a new element to the list?

A. `words[2] = {"fubar":3}`
B. `words.append({"fubar":3})`
C. `words[1] = {"fubar":3}`
D. More than one will work

What will be printed?

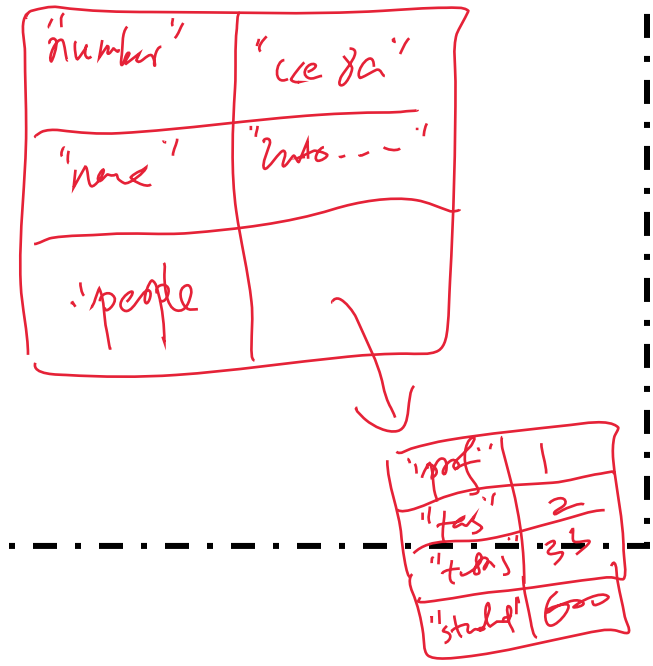
```
cookies = {"ucsd.edu": {"pwd": "abc"}, "python-news.com": {"font-pref": "courier",
"session": "XGKE"}}
print(cookies["python-news.com"]["session"])
```

A. `{"font-pref": "courier", "session": "XGKE"}`
B. `"session": "XGKE"`
C. "XGKE"
D. courier

What will be printed?

```
course = {}
course["number"] = "CSE 8A"
course["name"] = "Intro to Programming in Python"
course["people"] = {"profs": 1, "tas": 2, "tutors": 33, "students": 600}
result = 0
for k in course:
  if k == "people":
    for t in course[k]:
      result += course[k][t]
print(result)
```

A) 600
B) 36
C) 3
D) 35
E) 636



A) (43.073051, -89.401230)
B) 43.073051
C) -89.401230
D) Error: Key ["Madison"][1] not found in the dictionary