

Practice intro

December 1, 2021

```
[1]: import csv
      %precision 2
      with open('mpg.csv') as csvfile:
          mpg=list(csv.DictReader(csvfile))
      mpg[:3]
```

```
[1]: [OrderedDict([('', '1'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '1.8'),
                  ('year', '1999'),
                  ('cyl', '4'),
                  ('trans', 'auto(l5)'),
                  ('drv', 'f'),
                  ('cty', '18'),
                  ('hwy', '29'),
                  ('fl', 'p'),
                  ('class', 'compact')]),
      OrderedDict([('', '2'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '1.8'),
                  ('year', '1999'),
                  ('cyl', '4'),
                  ('trans', 'manual(m5)'),
                  ('drv', 'f'),
                  ('cty', '21'),
                  ('hwy', '29'),
                  ('fl', 'p'),
                  ('class', 'compact')]),
      OrderedDict([('', '3'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '2'),
                  ('year', '2008'),
                  ('cyl', '4'),
                  ('trans', 'manual(m6)'),
                  ('drv', 'f'),
```

```
        ('cty', '20'),  
        ('hwy', '31'),  
        ('fl', 'p'),  
        ('class', 'compact'))]]
```

```
[2]: import datetime as dt  
import time as tm
```

```
tm.time
```

```
[2]: <function time.time>
```

```
[3]: tm.time
```

```
[3]: <function time.time>
```

```
[4]: dtnow= dt.datetime.fromtimestamp(tm.time())
```

```
[5]: dtnow
```

```
[5]: datetime.datetime(2021, 8, 9, 13, 11, 31, 853143)
```

```
[6]: dtnow.year, dtnow.month,dtnow.day,dtnow.hour,dtnow.minute,dtnow.second
```

```
[6]: (2021, 8, 9, 13, 11, 31)
```

```
[7]: delta=dt.timedelta(days=100)  
delta
```

```
[7]: datetime.timedelta(days=100)
```

```
[8]: today=dt.date.today()
```

```
[9]: today-delta
```

```
[9]: datetime.date(2021, 5, 1)
```

```
[1]: %precision 2
```

```
[1]: '%.2f'
```

```
[2]: 99.99999999
```

```
[2]: 100.00
```

```
[3]: 1.961469619
```

```
[3]: 1.96
```

```
[4]: import csv  
%precision 2  
with open('mpg.csv') as csvfile:  
    mpg=list(csv.DictReader(csvfile))  
mpg[:3]
```

□

FileNotFoundError Traceback (most recent call
↳last)

```
<ipython-input-4-1acddc595daf> in <module>
      1 import csv
      2 get_ipython().run_line_magic('precision', '2')
----> 3 with open('mpg.csv') as csvfile:
      4     mpg=list(csv.DictReader(csvfile))
      5 mpg[:3]
```

FileNotFoundError: [Errno 2] No such file or directory: 'mpg.csv'

```
[2]: import csv
      %precision 2
      with open('mpg.csv') as csvfile:
          mpg=list(csv.DictReader(csvfile))
      mpg[:3]
```

```
[2]: [OrderedDict([('', '1'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '1.8'),
                  ('year', '1999'),
                  ('cyl', '4'),
                  ('trans', 'auto(l5)'),
                  ('drv', 'f'),
                  ('cty', '18'),
                  ('hwy', '29'),
                  ('fl', 'p'),
                  ('class', 'compact')]),
      OrderedDict([('', '2'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '1.8'),
                  ('year', '1999'),
                  ('cyl', '4'),
                  ('trans', 'manual(m5)'),
                  ('drv', 'f'),
                  ('cty', '21'),
                  ('hwy', '29'),
                  ('fl', 'p'),
                  ('class', 'compact')]),
      OrderedDict([('', '3'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
```

```
( 'displ', '2'),
( 'year', '2008'),
( 'cyl', '4'),
( 'trans', 'manual(m6)'),
( 'drv', 'f'),
( 'cty', '20'),
( 'hwy', '31'),
( 'fl', 'p'),
( 'class', 'compact'))]]
```

```
[3]: import csv
      %precision 2
      with open('mpg.csv') as csvfile:
          mpg=list(csv.DictReader(csvfile))
      mpg[:3]
```

```
[3]: [OrderedDict([(' ', '1'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '1.8'),
                  ('year', '1999'),
                  ('cyl', '4'),
                  ('trans', 'auto(15)'),
                  ('drv', 'f'),
                  ('cty', '18'),
                  ('hwy', '29'),
                  ('fl', 'p'),
                  ('class', 'compact'))],
      OrderedDict([(' ', '2'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '1.8'),
                  ('year', '1999'),
                  ('cyl', '4'),
                  ('trans', 'manual(m5)'),
                  ('drv', 'f'),
                  ('cty', '21'),
                  ('hwy', '29'),
                  ('fl', 'p'),
                  ('class', 'compact'))],
      OrderedDict([(' ', '3'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '2'),
                  ('year', '2008'),
                  ('cyl', '4'),
                  ('trans', 'manual(m6)'),
                  ('drv', 'f'),
```

```

('cty', '20'),
('hwy', '31'),
('fl', 'p'),
('class', 'compact'))]]

```

```

[7]: import csv
      %precision 2
      with open('mpg.csv') as csvfile:
          mpg=list(csv.DictReader(csvfile))
      mpg[:3]

```

```

[7]: [OrderedDict([('', '1'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '1.8'),
                  ('year', '1999'),
                  ('cyl', '4'),
                  ('trans', 'auto(l5)'),
                  ('drv', 'f'),
                  ('cty', '18'),
                  ('hwy', '29'),
                  ('fl', 'p'),
                  ('class', 'compact')]]),
      OrderedDict([('', '2'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '1.8'),
                  ('year', '1999'),
                  ('cyl', '4'),
                  ('trans', 'manual(m5)'),
                  ('drv', 'f'),
                  ('cty', '21'),
                  ('hwy', '29'),
                  ('fl', 'p'),
                  ('class', 'compact')]]),
      OrderedDict([('', '3'),
                  ('manufacturer', 'audi'),
                  ('model', 'a4'),
                  ('displ', '2'),
                  ('year', '2008'),
                  ('cyl', '4'),
                  ('trans', 'manual(m6)'),
                  ('drv', 'f'),
                  ('cty', '20'),
                  ('hwy', '31'),
                  ('fl', 'p'),
                  ('class', 'compact')]])]

```

```
[8]: len(mpg)
```

```
[8]: 234
```

```
[9]: mpg[0].keys()
```

```
[9]: odict_keys(['', 'manufacturer', 'model', 'displ', 'year', 'cyl', 'trans', 'drv',  
'cty', 'hwy', 'fl', 'class'])
```

```
[10]: sum(float(d['cty']) for d in mpg)/len(mpg)
```

```
[10]: 16.86
```

```
[11]: sum(float(d['hwy']) for d in mpg)/len(mpg)
```

```
[11]: 23.44
```

```
[13]: cylinders=set(d['cyl'] for d in mpg)  
cylinders
```

```
[13]: {'4', '5', '6', '8'}
```

```
[14]: ctympgbycyl=[]  
for c in cylinders:  
    summpg=0  
    cyltypecount=0  
    for d in mpg:  
        if d['cyl']==c:  
            summpg+=float(d['cty'])  
            cyltypecount+=1  
    ctympgbycyl.append((c,summpg/cyltypecount))  
ctympgbycyl.sort(key=lambda x:x[0])  
ctympgbycyl
```

```
[14]: [('4', 21.01), ('5', 20.50), ('6', 16.22), ('8', 12.57)]
```

```
[25]: ctympgbycyl.sort(key=lambda x:x[1])  
ctympgbycyl
```

```
[25]: [('8', 12.57), ('6', 16.22), ('5', 20.50), ('4', 21.01)]
```

```
[26]: list1=[[1,10],[10,100],[9,11],[44,4],[11,99]]  
list1.sort(key=lambda x:x[1])  
list1
```

```
[26]: [[44, 4], [1, 10], [9, 11], [11, 99], [10, 100]]
```

```
[:]
```

```
[:]
```

```
[:]
```