Numpy

In [1]:
```
1 import numpy as np
```

In [2]:
```
1 a=np.array([1,2,3])
```

In [3]:
```
1 a
```

Out[3]:
```
array([1, 2, 3])
```

In [5]:
```
1 print(type(a))
```

```
<class 'numpy.ndarray'>
```

In [20]:
```
1 b=np.arange(12)
```

In [21]:
```
1 b
```

Out[21]:
```
array([ 0,  1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11])
```

In [22]:
```
1 b.reshape(3,4)
```

Out[22]:
```
array([[ 0,  1,  2,  3],
       [ 4,  5,  6,  7],
       [ 8,  9, 10, 11]])
```

Scipy

In [25]:
```
1 from scipy import constants
```

In [28]:
```
1 #speed of light
2 print(constants.c)
```

```
299792458.0
```

In [29]:
```
1 #plank's constant
2 print(constants.h)
```

```
6.62607015e-34
```

In [30]:
```
1 #avogadro's number
2 print(constants.N_A)
```

```
6.02214076e+23
```

Pandas

In [31]:
```
1 import pandas as pd
```

In [39]:
```
1 df=pd.DataFrame(np.random.randn(6,4),index=list(range(6)),columns=list("ABCD
```

In [40]:
```
1 df
```

Out[40]:

	A	B	C	D
0	0.419123	-0.893516	-0.724722	0.607196
1	0.590861	0.576014	-0.872505	-0.561456
2	0.794492	0.187858	-0.246126	0.558083
3	-1.010426	0.303049	1.796606	0.040454
4	-0.448496	0.289712	-0.108017	-1.058889
5	0.271667	-0.837187	0.211585	-0.104153

In [41]:
```
1 df.describe()
```

Out[41]:

	A	B	C	D
count	6.000000	6.000000	6.000000	6.000000
mean	0.102870	-0.062345	0.009470	-0.086461
std	0.691146	0.635419	0.962367	0.645640
min	-1.010426	-0.893516	-0.872505	-1.058889
25%	-0.268455	-0.580926	-0.605073	-0.447130
50%	0.345395	0.238785	-0.177071	-0.031850
75%	0.547926	0.299714	0.131685	0.428676
max	0.794492	0.576014	1.796606	0.607196

In [42]:
```
1 df.shape
```

Out[42]: (6, 4)

Matplotlib

In [51]:
```
1 import matplotlib.pyplot as plt
2 import numpy as np
3 %matplotlib inline
```

In [52]:
```
1 np.random.seed(10)
```

In [53]:
```
N=40
x=np.random.rand(N)
y=np.random.rand(N)
colors=np.random.rand(N)
```

In [56]:
```
area=(40*np.random.rand(N)**2)
```

In [57]:
```
plt.scatter(x,y,s=area,c=colors,alpha=0.4)
plt.show()
```