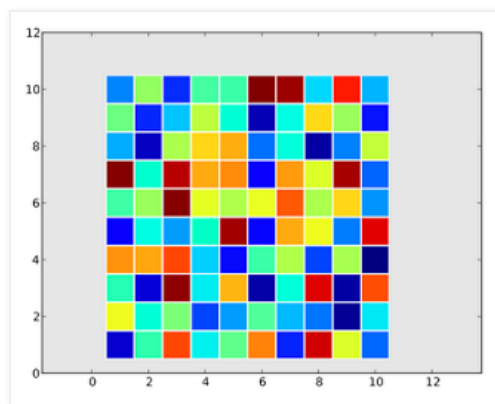


# Python for Bioinformatics

adventures in bioinformatics

Tuesday, December 15, 2009

## Matplotlib in OS X (3)

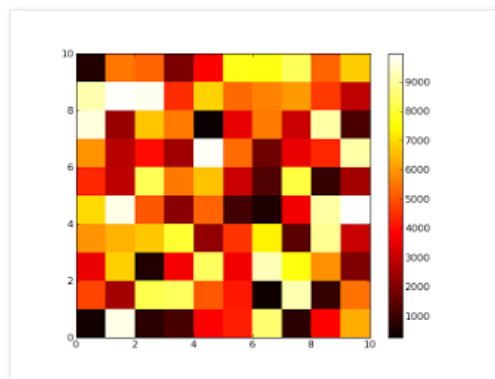


I've been playing with [matplotlib](#), and I have to say that the figures it produces are beautiful. Although the documentation is extensive, I do find it hard to navigate to the right pages, or find helpful examples by direct search. But of course, [GIYF](#).

Here is a proof of principle for a heat map in a few short lines of code. I still have to work on placing text, getting the right colors, etc. The fact that it's all Python is terrific. We use a scatterplot and adjust the size of the plot symbol (a square) to be as large as we need.

Probably it's obvious, but the call `plt.axis('equal')` is crucial because by default the axes are not typically equal and the "squares" are therefore not square. The call `yL = sum(yL, [ ])` is a clever trick I found on [Stack Overflow](#) for flattening a list.

[UPDATE: As is not uncommon, I found a simpler API after making this post. The result is shown below. The code is the *second* of the two samples.]



```
import matplotlib.pyplot as plt
import random
```



Jackson's Mill WV

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```

xL = range(1,11) * 10
yL = [[j]*10 for j in range(1,11)]
yL = sum(yL,[])

R = xrange(100000)
cL = [random.choice(R) for i in range(len(xL))]

fig = plt.figure()
ax = fig.add_subplot(111,axisbg='0.9') # light gray
plt.axis('equal')
ax.scatter(xL, yL,c=cL,
           marker='s',edgecolor='w',s=1250)

plt.savefig('example.pdf')

```

```

import matplotlib.pyplot as plt
import numpy as np
import random

```

```

R = xrange(10000)
data = [random.choice(R) for i in range(100)]
data = np.array(data)
data.shape = (10,10)

```

```

fig = plt.figure()
plt.hot()
plt.pcolormesh(data)
plt.colorbar()
plt.savefig('example.png')

```

Posted by telliott99 at 12/15/2009 06:57:00 AM



Labels: [matplotlib](#), [numpy](#)

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#### About Me



**telliott99**

I teach and do research in Microbiology. This blog started as a record of my adventures learning bioinformatics and using Python. It has expanded to include Cocoa, R, simple math and assorted topics. As bbum says, it's so "google can organize my head." The programs here are developed on OS X using R and Python plus other software as noted. YMMV

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