A guide to the `plot.sociomatrix` function of the sna library for R

The function creates a visualization of an adjacency matrix. Cells within the matrix will be shaded according to their values, with the maximum value in the dataset assigned to black, and the minimum assigned to white. Values in between are assigned shades of gray.

The function accepts either an adjacency matrix or a network object. (Note: this function plots the matrix as it is given, so an edgelist matrix will be drawn as a two-column matrix, not an adjacency matrix.)

The form of the function

`plot.sociomatrix(data_matrix)` will draw an adjacency matrix using the default parameters.

`plot.sociomatrix(data_matrix, argument=parameter)` is used to specify parameters.

The matrix for these examples

The matrix in these examples is a $5 \times 5$ matrix of randomly generated values between 0 and 1. `runif()` is a uniform distribution method from the stats library that generates random numbers.

```r
random_matrix <- matrix(runif(25, min=0, max=1), nrow=5)
```

```
[1,] 0.11181196 0.70910886 0.58897018 0.92731160 0.7714852 
[2,] 0.08577745 0.47511275 0.64958284 0.57841059 0.5287283 
[3,] 0.83668976 0.02171768 0.19401610 0.67845030 0.6305278 
[4,] 0.71486072 0.94988047 0.31344713 0.41130519 0.2867109 
[5,] 0.49970575 0.86235708 0.03473432 0.00570971 0.6900262 
```

```
1 2 3 4 5
1 . . . . .
2 . . . . .
3 . . . . .
4 . . . . .
5 . . . . .
```

`plot.sociomatrix(random_matrix)`
### Arguments and parameters

<table>
<thead>
<tr>
<th>Argument</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>drawlines</strong></td>
<td>TRUE</td>
<td>draw lines at cell boundaries (default)</td>
</tr>
<tr>
<td></td>
<td>FALSE</td>
<td>do not draw cell boundaries</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Argument</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>drawlab</strong></td>
<td>TRUE</td>
<td>place labels on the rows and columns (default, uses row/column numbers or labels)</td>
</tr>
<tr>
<td></td>
<td>FALSE</td>
<td>do not draw labels</td>
</tr>
</tbody>
</table>

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</thead>
<tbody>
<tr>
<td><strong>diaglab</strong></td>
<td>TRUE</td>
<td>place labels on the diagonal (default)</td>
</tr>
<tr>
<td></td>
<td>FALSE</td>
<td>do not place labels on the diagonal</td>
</tr>
</tbody>
</table>

**Note:** Saving as pdf produced white lines between cells because gaps are left between squares. Saving as .ps gave correct image. May fix the pdf image in Illustrator by slightly enlarging each square.
**labels**

two lists

the first list is labels for rows, the second list is labels for columns; the diagonal can be labeled only if the lists are identical

```
plot.sociomatrix(random_matrix, labels=list(c("one", "two", "three", "four", "five"), c("1", "2", "3", "4", "5")))
```

**cex.lab**

num. value

expansion factor for labels

```
plot.sociomatrix(random_matrix, cex.lab=2)
```

**xlab**

character string or expression

label for the columns

```
plot.sociomatrix(random_matrix, xlab="column label", ylab="row label")
```
plot.sociomatrix(random_matrix, main="main title for plot",
sub="subtitle for plot")

plot.sociomatrix(random_matrix, asp=0.5)