Learning R

Finding my way around R

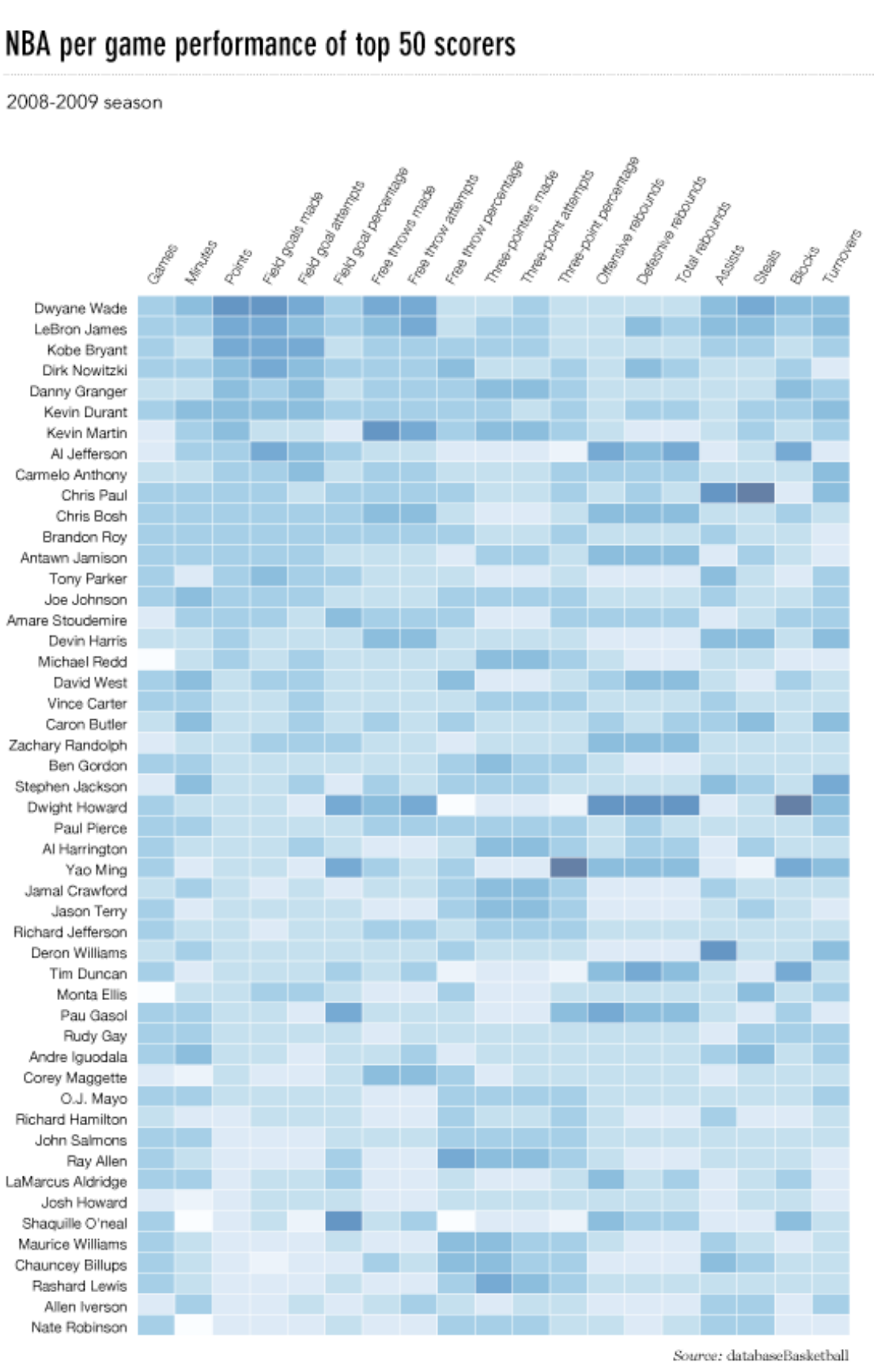
ggplot2: Quick Heatmap Plotting

JANUARY 26, 2010

tags: ggplot2, heatmap, plot, R

A post on FlowingData blog **demonstrated (http://flowingdata.com/2010/01/21/how-to-make-a-heatmap-a-quick-and-easy-solution/)** how to quickly make a heatmap below using R base graphics.

This post shows how to achieve a very similar result using **ggplot2 (http://had.co.nz/ggplot2/)**.


NBA per game performance of top 50 scorers
2008-2009 season
Games
Minutes
Points
Field goals made
Field goal attempts
Field goal percentage
Free throws made
Free throw attempts
Free throw percentage
Three-pointers made
Three-point attempts
Three-point percentage
Offensive rebounds
Defensive rebounds
Total rebounds
Assists
Steals
Blocks
Turnovers
Dwyane Wade
LeBron James
Kobe Bryant
Dirk Nowitzki
Danny Granger
Kevin Durant
Kevin Martin
Al Jefferson
Carmelo Anthony
Chris Paul
Chris Bosh
Brandon Roy
Antawn Jamison
Tony Parker
Joe Johnson
Amare Stoudemire
Devin Harris
Michael Redd
David West
Vince Carter
Caron Butler
Zachary Randolph
Ben Gordon
Stephen Jackson
Dwight Howard
Paul Pierce
Al Harrington
Yao Ming
Jamal Crawford
Jason Terry
Richard Jefferson
Deron Williams
Tim Duncan
Monta Ellis
Pau Gasol
Rudy Gay
Andre Iguodala
Corey Maggette
O.J. Mayo
Richard Hamilton
John Salmons
Ray Allen
LaMarcus Aldridge
Josh Howard
Shaquille O'neal
Maurice Williams
Chauncey Billups
Rashard Lewis
Allen Iverson
Nate Robinson
Source: databaseBasketball

Data Import

FlowingData used last season's NBA basketball statistics provided by **databasebasketball.com (http://databasebasketball.com/)**, and the csv-file with the data can be downloaded directly from its website.

```
> nba <- read.csv("http://datasets.flowingdata.com/ppg2008.csv")
```

The players are ordered by points scored, and the Name variable converted to a factor that ensures proper sorting of the plot.

```
> nba$Name <- with(nba, reorder(Name, PTS))
```

Whilst FlowingData uses `heatmap` function in the `stats`-package that requires the plotted values to be in matrix format, `ggplot2` operates with dataframes. For ease of processing, the dataframe is converted from wide format to a long format.

The game statistics have very different ranges, so to make them comparable all the individual statistics are rescaled.

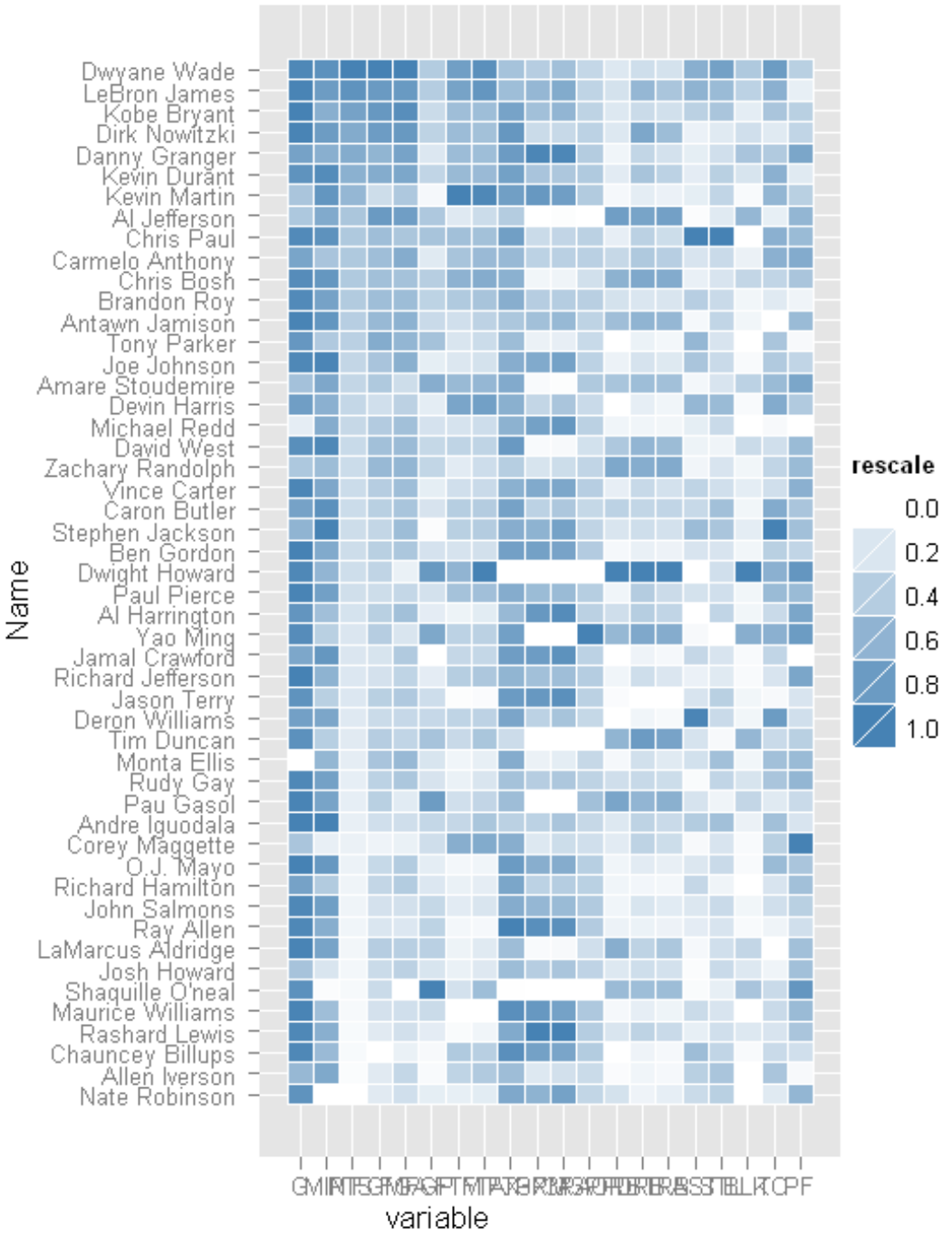
```
> library(ggplot2)
```

```
> nba.m <- melt(nba)
> nba.m <- ddply(nba.m, .(variable), transform,
+     rescale = rescale(value))
```

Plotting

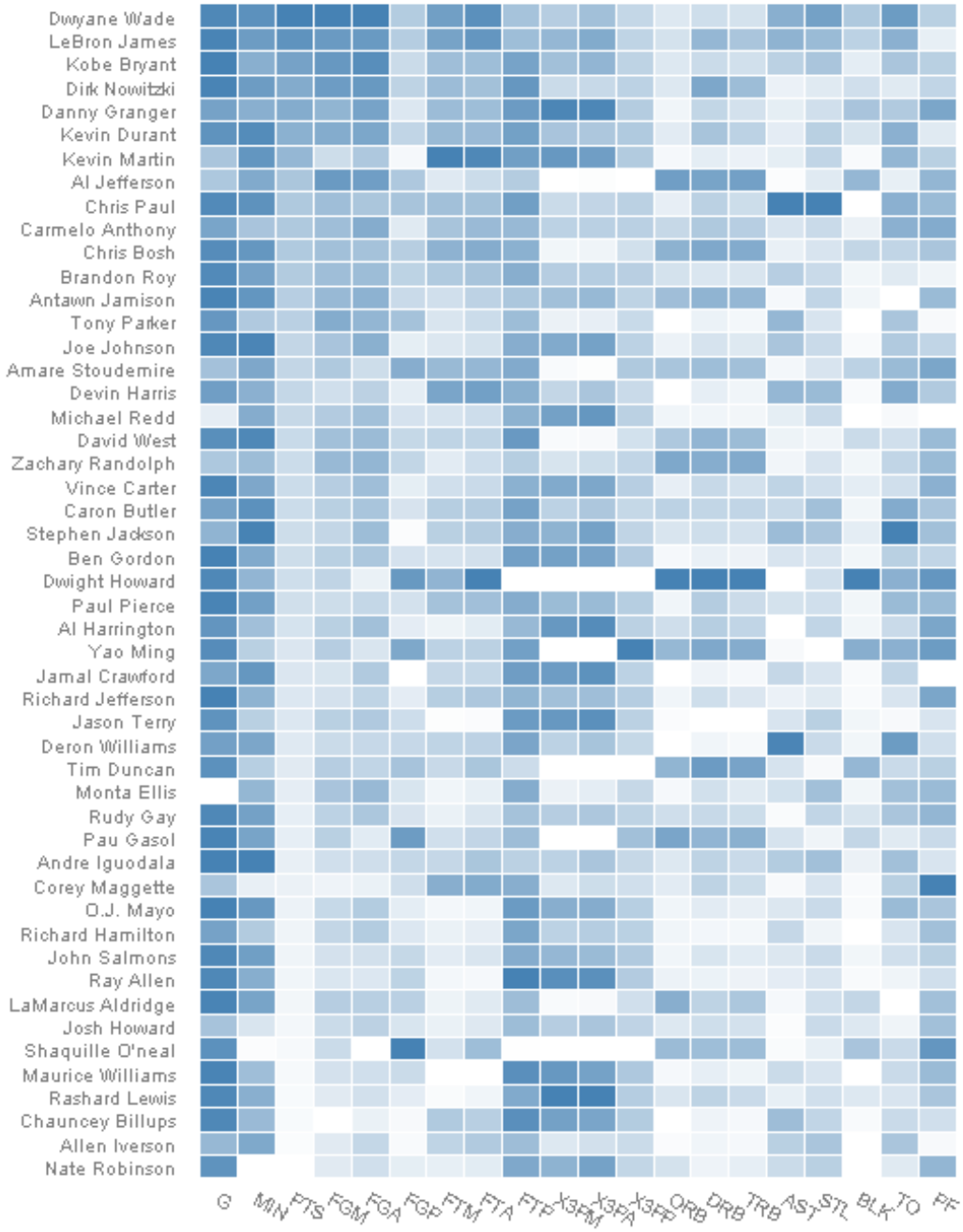
There is no specific heatmap plotting function in `ggplot2`, but combining `geom_tile` with a smooth gradient fill does the job very well.

```
> (p <- ggplot(nba.m, aes(variable, Name)) + geom_tile(aes(fill = rescale),
+     colour = "white") + scale_fill_gradient(low = "white",
+     high = "steelblue"))
```



A few finishing touches to the formatting, and the heatmap plot is ready for presentation.

```
> base_size <- 9
> p + theme_grey(base_size = base_size) + labs(x = "",
+     y = "") + scale_x_discrete(expand = c(0, 0)) +
+     scale_y_discrete(expand = c(0, 0)) + opts(legend.position = "none",
+     axis.ticks = theme_blank(), axis.text.x = theme_text(size = base_size *
+         0.8, angle = 330, hjust = 0, colour = "grey50"))
```



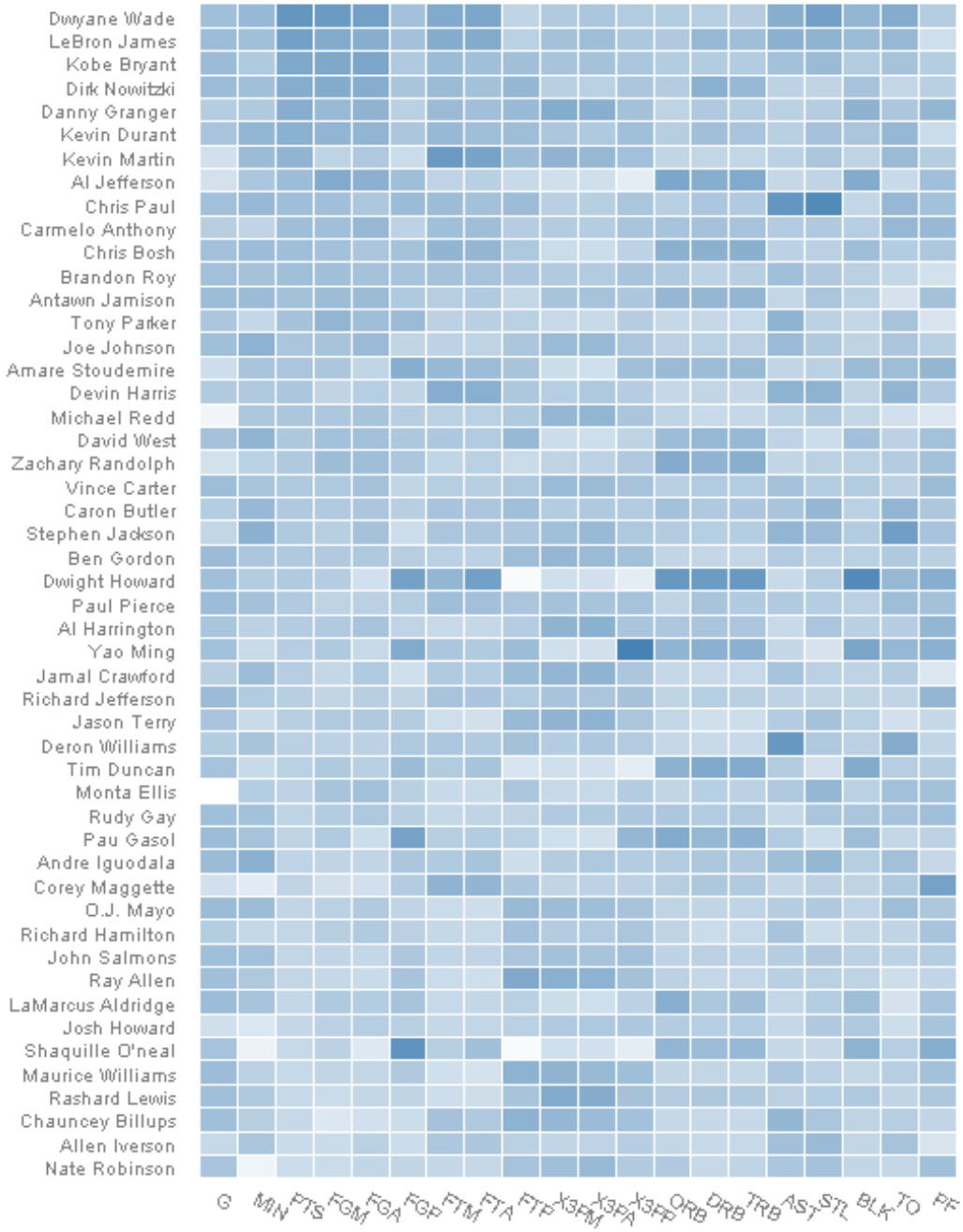
Rescaling Update

In preparing the data for the above plot all the variables were rescaled so that they were between 0 and 1.

Jim rightly pointed out in the comments (and I did not initally get it) that the `heatmap`-function uses a different scaling method and therefore the plots are not identical. Below is an updated version of the heatmap which looks much more similar to the original.

```
> nba.s <- ddply(nba.m, .(variable), transform,
+     rescale = scale(value))
```

```
> last_plot() %+% nba.s
```



from → R

102 Comments leave one →

1. **Jim Adams PERMALINK**

January 26, 2010 3:34 pm
How the scaling by column (as in the original article) can be achieved?

REPLY

- **learnr PERMALINK***
  January 26, 2010 4:50 pm
  This is exactly what this line of code does (scales all the variables or columns):
  ```
  nba.m <- ddply(nba.m, .(variable), transform, rescale = rescale(value))
  ```

  REPLY

  - **Jim Adams PERMALINK**
    January 28, 2010 1:25 pm
    I don't think so. This one scales all the values. What I said is how we could scale each column separated from the others. I did something like that

    nba <- read.csv("http://datasets.flowingdata.com/ppg2008.csv&quot

    scaled.nba <- cbind(nba[1],apply(nba[2:21], 2, scale))

    base_size <- 9

    (p <- ggplot(melt(scaled.nba), aes(variable, Name)) + geom_tile(aes(fill = value), colour = "white") + scale_fill_gradient(low = "white", high = "steelblue"))
    p + theme_grey(base_size = base_size) + labs(x = "", y = "") + scale_x_discrete(expand = c(0, 0)) + scale_y_discrete(expand = c(0, 0)) + opts(legend.position = "none",
    axis.ticks = theme_blank(), axis.text.x = theme_text(size = base_size * 0.8, angle = 330, hjust = 0, colour = "grey50"))

  - **learnr PERMALINK***
    January 28, 2010 2:15 pm
    I have to disagree.
    ```
    nba.m <- ddply(nba.m, .(variable), transform, rescale =
    rescale(value))
    ```
    rescales each variable separately to be between 0 and 1.

    ```
    > nba.m1 <- cast(nba.m[,c(1,2,4)], Name ~ variable)
    > nba.m1[nba.m1$Name == "Dwyane Wade ",1:5]
    Name G MIN PTS FGM
    21 Dwyane Wade 0.9473684 0.8787879 1 1
    ```

    whereas your approach gives the following
    ```
    > scaled.nba[scaled.nba$Name == "Dwyane Wade ",1:5]
    Name G MIN PTS FGM
    1 Dwyane Wade 0.61793 1.001970 3.179941 2.920022
    ```

    We are using two different approaches to scaling as evidenced by the results below:
    ```
    > scale(c(1,5,15))
    [,1]
    [1,] -0.8320503
    [2,] -0.2773501
    [3,] 1.1094004
    attr(,"scaled:center")
    [1] 7
    ```

```
attr(,"scaled:scale")
[1] 7.211103
> rescale(c(1,5,15))
[1] 0.0000000 0.2857143 1.0000000
```

- **Jim Adams PERMALINK**
  January 28, 2010 9:26 pm
  We are indeed using two different approaches to scaling. The proof is that my approach gives the initial plot of your post (when the dataframe is appropriately sorted – which is something I skipped) while yours does not.

2. **JohnMajor PERMALINK**
   February 2, 2010 2:46 am
   If you precompute the dataframe representing your 3d matrix, you can also use ggfluctuation(df,type=colour).

   j

   REPLY
3. **Jake PERMALINK**
   March 24, 2010 8:43 pm
   I'm wondering if this graph could be improved by categorizing the Stats and changing the colors. For example:

   Offensive(pts, fgm, fga, 3pts m, 3pts, a) – white to red
   Defensive (def rebs, off rebs, steals) – from white to green
   Other /hustle (everything else) – white to blue

   So all offensive stats would be next to each other, defensive, and other. That way just by looking at the different colors you can get a grasp at where these players are excelling. Right now, its a heatmap but there's no order to the columns and its tough to cluster all-around or offensive only players visually.

   REPLY
   - **learnr PERMALINK***
     March 25, 2010 11:22 am
     Fully agree with you, do you have any ideas how to accomplish this?

     REPLY
   - **ThatGuy PERMALINK**
     October 23, 2012 1:59 am
     A solution to this problem has been posted by Brian Diggs at Stack Overflow:
     http://stackoverflow.com/a/13016912/1765910

     REPLY
4. **thomas PERMALINK**
   August 1, 2010 5:14 am
   why is it that when another dataset is supplied, the fillings are incorrect?
   i supplied my own and this line:
   A61B,35801,5026,2180,261,86,1430,27913,6057

   looks like this:
   http://img202.imageshack.us/img202/8721/ggplot2.jpg

something is off, but i don't know (yet) what
are the cells filled on a column-base? ie. if it has the highest value in the column, it is steelblue?

REPLY

- **learnr PERMALINK***
  August 15, 2010 9:24 pm
  Sorry for the late reply.

  As all the values were rescaled, then they are not filled/coloured based on the column-base.

  Without seeing the sample data and the code used to generate the image, it is difficult to tell what is going wrong, I suspect a problem with sorting the data.

  REPLY
  - **thomas PERMALINK**
    August 15, 2010 9:30 pm
    hi,
    thanks for getting back to me. i figured it out, i missed the rescaling function.
    thanks,
    thomas

5. **James PERMALINK**
   August 21, 2010 6:06 am
   Just wanted to thank you for an air-tight presentation of R code that actually worked, it was such a wonderful thing! Thanks again!

   REPLY
6. **rufina PERMALINK**
   August 25, 2010 11:22 pm
   How to draw if there is negative value in it. I am drawing a log graph that has values from -5 to 5 ..

   REPLY
   - **learnr PERMALINK***
     August 27, 2010 5:30 pm
     This technique should work for negative values, as well.

     REPLY
7. **Brandon Bertelsen PERMALINK**
   September 19, 2010 4:23 am
   Where did you find the "reorder" function? It doesn't show up in any of the packages I have installed.

   REPLY
   - **learnr PERMALINK***
     September 19, 2010 7:09 am
     It is part of the stats-package, which is installed by default if I am not mistaken.
     Try `stats::reorder`.

     REPLY
     - **Brandon Erik Bertelsen PERMALINK**
       September 29, 2010 9:17 pm
       How right you are. I just suffered a typing malfunction "reooder"

8. **ricardo PERMALINK**

October 7, 2010 8:10 pm
how did you get rid of the grey plot background?

REPLY

- **learnr PERMALINK***
  October 7, 2010 9:09 pm
  Have a look at the theming options of ggplot2.
  If I remember correctly, using theme_bw() should be a good start.

  REPLY

9. **cricket_pagol PERMALINK**
   October 12, 2010 7:14 am
   hi, I have two questions.

   1. My X-axis and Y-axis values are string characters, and this method automatically sorts the axis by string character. How can I get rid of the sorting?

   2. Sometime it becomes difficult to distinguish the white from light blue, how can I assign colors to particular values. For my dataset, there are 5 unique values.

   Otherwise, I love the graphics, keep up the good work.

   REPLY

   - **learnr PERMALINK***
     October 24, 2010 10:26 pm
     Sorry for taking so long to reply to your questions.

     1. If you use factors, then the strings are not sorted alphabetically, but follow the ordering of the factor levels.

     2. Have a look at http://had.co.nz/ggplot2/scale_manual.html

     REPLY

     - **joey711 PERMALINK**
       May 9, 2012 2:39 am
       Thanks! This tip helps a lot! The ordering issue was driving me crazy…

10. **PY PERMALINK**
    October 21, 2010 12:52 am
    Thanks for the tutorial. It's awesome. I have a quick question. In the:
    (p=ggplot(megan.m, aes(variable, Name)) + geom_tile(aes(fill = value),
    + colour="black")+scale_fill_gradient(low="black",
    + high ="red"))
    It seems that the color gradient from black (low) to red (high) doesn't seem to be very obvious, especially when we have a large data set to show on the heatmap. Is it possible to have more color tones so that the color gradient is more gentle? Say, low ="black", medium values ="orange" and high = "red"? If this is possible, how can we go about doing that?

    REPLY

    - **learnr PERMALINK***
      October 24, 2010 10:24 pm
      You might want to have a look at
      http://had.co.nz/ggplot2/scale_gradient2.html.

REPLY

11. **Chris Struchtemeyer PERMALINK**
October 28, 2010 4:19 am
Is there a way to add the legend back onto the 2nd or 3rd heatmaps you show above? Thanks. I really have no computer programing experience at all.

REPLY

- **learnr PERMALINK***
October 29, 2010 2:06 pm
If you remove `opts(legend.position = "none")` from the script, the legends should reappear.

REPLY

12. **Zach PERMALINK**
November 11, 2010 9:40 pm
Quick question: Any idea how I could get the values of the colors from the heatmap back? Thanks for any ideas.

REPLY

- **learnr PERMALINK***
November 11, 2010 10:16 pm
Are you after the RGB codes of colours, or something else?
Could you please elaborate a bit what you mean, as I don't quite understand your question.

REPLY

  - **Zach PERMALINK**
November 13, 2010 8:19 am
Yeah, I'm after the RGB codes from the heatmap. I've been using your tutorial as a base for some of my personal projects, but I'm unsure how to get the RGB codes from each tile on the heatmap.

  - **learnr PERMALINK***
November 15, 2010 1:45 pm
I am not aware of any way of getting the RGB codes other than by digging into ggplot2 source code.

13. **Roy PERMALINK**
December 15, 2010 1:20 am
Hi,
I was just wondering what does the step

base_size <- 9

do?

Thx

REPLY

- **learnr PERMALINK***
December 15, 2010 10:17 pm
This sets the font size in the theme used.

REPLY

14. **Roy PERMALINK**
December 16, 2010 6:42 pm
Thanks for your reply. How do I get rid of the white grid lines between the boxes?
Something different. For this graph, the x axis is at the bottom and y on the left side. How do I plot x axis on the top and y axis on the left side?

REPLY

- **learnr PERMALINK***
December 16, 2010 7:44 pm
Check out `opts(panel.grid.major = theme_blank())` or `opts(panel.grid.minor = theme_blank())`

In response to your second question, I don't think it is not currently possible to have x-axis on top.

REPLY

- **Roy PERMALINK**
December 16, 2010 10:25 pm
Thanks again for your reply. Based on this concept I have inplemented a very interesting plot in R. Do you think I can post it here?

- **learnr PERMALINK***
December 19, 2010 11:51 pm
Of course, you can post it here.

15. **Roy PERMALINK**
December 20, 2010 7:22 pm
http://tinypic.com/r/o8cfm0/7
http://tinypic.com/r/2uiizvb/7

This was created in ggplot2 similar to a heatmap.
The input datafile is too big to post here.

REPLY

- **Dli PERMALINK**
December 5, 2012 10:07 pm
Hi Roy, how did you move the x-axis to the top of the heatmap? Thanks.

REPLY

16. **David Rio PERMALINK**
January 13, 2011 9:14 pm
This is very useful. Thanks.
Does anyone know how do add the actual values of the dataframe within the heatmap?

REPLY

- **learnr PERMALINK***
January 14, 2011 12:06 am
Could you please elaborate a bit more what you are trying to do?

REPLY

- **David Rio PERMALINK**
January 25, 2011 9:56 pm

What I meant is that I'd like to be able to see the actual value of the gradient used to pick the color in the matrix. So you can start by looking to the heatcolors, and then if necessary look at the actual value used in the matrix.

- **Jack Tanner PERMALINK**
  January 23, 2012 7:51 am
  I'm in the same boat; I'd like to overlay each colored tile with the actual value used to choose the color.

- **learnr PERMALINK***
  January 24, 2012 10:43 pm
  Use geom_text() to add the values to each tile.

17. **San Chow PERMALINK**
    February 17, 2011 6:45 am
    Is it possible to show clusters/density/contour on these heatmaps?
    For example: Put a circle over the dark blue clusters.

    REPLY
    - **learnr PERMALINK***
      February 17, 2011 4:43 pm
      You would need to calculate the coordinates separately, and then it would be possible.

      REPLY
18. **yogita PERMALINK**
    February 28, 2011 12:41 pm
    I found this forum very useful and i would like to thanks all the users specially @learnr.
    Now i have enough idea to start with heatmap. will get back to you people in case i got an trouble.

    Best Regards

    REPLY
19. **Daniel PERMALINK**
    March 9, 2011 6:39 am
    I thought the post using ggplot2 to display heatmaps was really excellent!. However, for the "tweaking" of the appearance I get the following error:

    " Error in unit.c(margin$left, widths, margin$right) :
    It is invalid to combine unit objects with other types"

    Any idea why that might be?

    REPLY
20. **Alissandra Stoyan PERMALINK**
    June 22, 2011 2:36 am
    This code worked great! However, what if I don't want to reorder the dataset? I tried not including this line:

    nba$Name <- with(nba, reorder(Name, PTS))

    I am dealing with countries and they are still ordered in reverse alphabetical order for some reason. What if I want to keep the original ordering of my dataframe? Thanks so much!

    REPLY

- **learnr PERMALINK***
  June 30, 2011 1:21 pm
  I think ggplot2 automatically sorts the axis categories. You can keep the original ordering by converting the sorting variable into factor and adjusting the levels accordingly.

  REPLY
  - **Sridhar PERMALINK**
    December 6, 2011 2:48 am
    "I think ggplot2 automatically sorts the axis categories. You can keep the original ordering by converting the sorting variable into factor and adjusting the levels accordingly."

    I use R but I am not expert. I have to plot a heat map of my 2×2 matrix. I am wondering how to preserve the original ordering.
    Could you explain it in the case of the above example.
    nba$Name <- with(nba, reorder(Name, PTS))
    Which is the sorting variable in the above example. and how to adjust the levels.

  - **learnr PERMALINK***
    December 6, 2011 4:17 pm
    From `?reorder` : the first argument is a categorical variable, and its levels are reordered based on the values of a second variable, usually numeric.

    So `nba$Name <- with(nba, reorder(Name, PTS))` reorders the names based on points scored.

- **chris smith PERMALINK**
  December 6, 2011 8:38 pm
  I'm in the exact same situation as Alissandra and Sridhra; I would like to know how to get the heatmap plot to keep the rows and columns ordered in the exact way of the original data. Can you please provide the exact code to do such? This is my 1st attempt at using R, so I'm unsure of the methods that could even allow me to do this. Thanks!

  REPLY
  - **learnr PERMALINK***
    December 7, 2011 2:40 am
    You would need to convert the original rows and columns to a factor, and to keep the order use the levels argument of `factor()` .

    You might want to take a look at this blog post for inspiration.

21. **ashkan PERMALINK**
    July 18, 2011 1:08 am
    just want to say one can create heatmap of data in excel using
    conditional formatting > color scales

    REPLY
22. **Yifang PERMALINK**
    October 10, 2011 5:45 pm
    Can I ask how to draw a heatmap for just one column, as my data has only one variable and I want display it by heatmap? Thanks!

    REPLY
    - **learnr PERMALINK***

December 6, 2011 4:31 pm
I assume you still have x & y variables, so the technique remains the same as in the post above.

REPLY

- **Yifang PERMALINK**
  December 6, 2011 8:34 pm
  Yes, I was trying to understand this forum because of novice. I have to say this technique is beautiful. Can you give me an example of single x&y variables of your function? Say nba$Name vs nba$PTS. The transformation of the raw data confused me and I am totally lost. with nba.m.

  Thanks!

23. **chris smith PERMALINK**
December 1, 2011 2:16 am
Thanks for the article; it's the best heatmap example I've seen. However, I have a question. What am I supposed to pass as params to aes()? The help page for aes() mentions specifying x and y, but in our case, what would that be? I've tried several things but am clueless.

Please help. Thanks!

REPLY

- **learnr PERMALINK***
  December 6, 2011 4:30 pm
  aes function takes care of the aesthetic mappings of variables at the time the plot is rendered.

  Could you please be a bit more specific as to which case you are referring to?

  REPLY

24. **Yifang PERMALINK**
December 7, 2011 2:03 am
I tried using following script:

ggplot(nba.m, aes(variable==”PTS”, Name)) + geom_tile(aes(fill = rescale), colour = “white”) + scale_fill_gradient(low = “white”, high = “steelblue”))

I believe the column FALSE is what I need, but there is an extra column (TRUE) alongside. How to remove this extra column? Unfortunately I can't post the figure here.
Thanks!

REPLY

- **learnr PERMALINK***
  December 7, 2011 2:35 am
  If you only want to plot a heatmap of the individual points scored then try this:

```
ggplot(subset(nba.m, variable==”PTS”), aes(variable, Name)) +
geom_tile(aes(fill = rescale), colour = “white”) +
scale_fill_gradient(low = “white”, high = “steelblue”))
```

  REPLY

- **Yifang PERMALINK**
  December 7, 2011 8:03 pm
  Thanks Learnr!

This is a great tutorial on heatmap, that can be used for my purpose. Actually my data structure is a little different from the NBA data that only contains two columns: one for the row names (X) and one for observation (Y).

———————

Var1 Freq
10 1
426 1
543 4
555 1
569 3
570 1
577 2
594 3
811 2
849 35
866 9
868 20
…

———————

The Var1 can be treated as string as row.names. That's why I asked how to handle one variable. I tried following script:

```
data <-read.csv("/home/yifang/20110818-Ron/cs02.csv")
row.names(data) <- data$Var1
data.m <- melt(data)
data.m <- ddply(data.m, .(variable), transform, rescale = rescale(value))
ggplot(subset(data.m, variable=="Freq"), aes(variable, Var1)) + geom_tile(aes(fill = rescale),
colour = "white") + scale_fill_gradient(low = "white", high = "Red")
```

But the biggest problem is the color which is so faint. Probably this is not the right tool I should use, but your tutorial gave me the closest idea of what I want. How to improve my script?
Thanks!
Yifang

25. **Jo PERMALINK**
February 3, 2012 2:25 am

I'm trying to put 5 heatmaps on one plot. I added a column to my original data frame which is string variables designating which plot (i used rbind to put together all 5 data sets). then I tried simply adding the command

facet_wrap(~sim)

to my ggplot (sim is the name of the column which identifies each of the 5 groups). i get a lot of errors which i think are due to the fact that for each column/row pair, I now have 5 values (which i want to split up, but ggplot is still getting confused as to which one goes where). any ideas?

thanks!

REPLY

- **learnr PERMALINK***
April 9, 2012 11:18 am

  As you do not reveal any of the errors you are getting, it is quite difficult to guess where the problem might be.

REPLY

26. **Jakob PERMALINK**
April 25, 2012 8:41 pm
Hi there,
in your very first heatmap in this post the labels for the x-axis are on top of the heatmap. How did you achieve that? I have not found any option to set it like that.
Thanks!

PS: Thank you a lot for this post – I have already used it with great succes and find it very useful!

REPLY

- **learnr PERMALINK***
May 3, 2012 4:58 pm
The first plot is from the original article, and I believe has been modified by hand.

REPLY

27. **DDP PERMALINK**
May 3, 2012 12:00 pm
wow really cool thanks for sharing. What package did you use to find the rescale function?

REPLY

- **learnr PERMALINK***
May 3, 2012 5:00 pm
`rescale` function is nowadays part of the `scales` package.

REPLY

  - **Deiya PERMALINK**
May 6, 2012 6:32 am
Thanks for the reply My heat map is off and running! I used red though
Quick Q: Do functions like rescale go away with new versions of R? Are they a lot of functions like this?

  - **learnr PERMALINK***
May 9, 2012 1:21 pm
No they do not. The author of this function just moved it to a new package.

  - **Roy PERMALINK**
July 17, 2012 11:30 am
package plotrix has rescale()

28. **Roy PERMALINK**
May 18, 2012 1:13 pm
there is also a rescale function in plotrix

REPLY

29. **Roy PERMALINK**
May 18, 2012 2:06 pm
Is there any way to print the values on the coloured tiles?

REPLY

- **learnr PERMALINK***
May 18, 2012 2:24 pm
Yes, use geom_text().

REPLY

30. **Carmine PERMALINK**
June 20, 2012 1:42 am
Thanks for the tutorial. I just have a few questions/potential suggestions depending on your intended audience. It would be very useful in you could expand on you descriptions of what each line of code is actually doing and how it is formatted (such as when you mention rescaling but give little detail beyond the code about exactly how the rescaling function works, this left me unsure whether the rescale used would be at all appropriate for my data, instead it was just kind of a mystery function, plus it left me not knowing how to modify it to my ends). Also, you didn't mention that the melt function you call on is not (so far as I can tell) included with R or ggplot2, but rather comes with the "reshape" libraries. Maybe your audience is supposed to be experienced users so I just failed to come to the site with enough foundation to use the tutorial. At any rate, it was still somewhat helpful.

REPLY

- **learnr PERMALINK***
July 17, 2012 11:32 am
Thanks for your comments.
The used packages have evolved over the years, and some of the mechanics have changed on the way. For example, in previous versions `ggplot2` was loading `reshape` and `plyr` packages, this is not so any more.

If you ever come across a function you do not know, the easiest and safest way is to browse its help pages. `?rescale` or `??rescale` would give you background information on how the function operates.

REPLY

31. **Daniel PERMALINK**
June 28, 2012 11:39 am
Hey, thanks for this awesome post.
I have a question, where can I find the rescale function in R?

REPLY

- **learnr PERMALINK***
July 17, 2012 11:24 am
It has been moved to `library(scales)`.

REPLY

32. **Jake PERMALINK**
January 26, 2013 10:59 am
may anyone help with me ? it says: Could not find function"melt" Thanks

> nba nba$Name library(ggplot2)
> nba.m

REPLY

- **learnr PERMALINK***
June 6, 2013 9:50 am
You need `library(reshape2)`

REPLY

33. **Jake PERMALINK**
January 26, 2013 11:19 am
Hi, after I installed reshape package, I still got this:

> library(reshape)
Loading required package: plyr

Attaching package: 'reshape'

The following object(s) are masked from 'package:plyr':

rename, round_any

>

How to solve this ?

REPLY

- **learnr PERMALINK***
  June 6, 2013 9:49 am
  This is not a problem, and does not to be solved – these are just messages displayed on loading of the package.

  REPLY

34. **Bjørn Øst Hansen PERMALINK**
    June 5, 2013 12:26 pm
    I was wondering if i wanted to change the proportions of the tiles, i have tried to use geom_tile(aes(fill = value),colour = "grey", width=0.2, height=2). It makes them more narrow, but does not change the heatmap it self, how do i do that?

    REPLY

- **learnr PERMALINK***
  June 6, 2013 9:54 am
  Sorry, I do not quite understand what you are trying to achieve.

  REPLY

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