

Animated plot using animation package

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October 7, 2015

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

Step 1: first you would need to install imageMagick. I used an installer from <http://cactuslab.com/imagemagick/> and that worked well for me.

Step 2: load the required libraries and map.

```
require(animation)
```

```
## Loading required package: animation
```

```
## Warning: package 'animation' was built under R version 3.1.3
```

```
require(RColorBrewer)
```

```
## Loading required package: RColorBrewer
```

```
require(maps)
```

```
## Loading required package: maps
```

```
## Warning: package 'maps' was built under R version 3.1.3
```

```
##  
## # ATTENTION: maps v3.0 has an updated 'world' map. #  
## # Many country borders and names have changed since 1990. #  
## # Type '?world' or 'news(package="maps")'. See README_v3. #
```

```
require(maptools)
```

```
## Loading required package: maptools
```

```
## Loading required package: sp
```

```
## Warning: package 'sp' was built under R version 3.1.3
```

```
## Checking rgeos availability: FALSE
```

```
## Note: when rgeos is not available, polygon geometry computations in maptools depend on gpclib  
## which has a restricted licence. It is disabled by default;  
## to enable gpclib, type gpclibPermit()
```

```
data(state.vbm)
```

Step 2: Decide a sequence of plots you will make. For this example, we will visualize the variables **Income** and **HS Grad** from the `state.x77` data set.

```
data(state.vbm)
tmp.x <- state.x77[, 'Income']
tmp2.x <- cut(tmp.x,

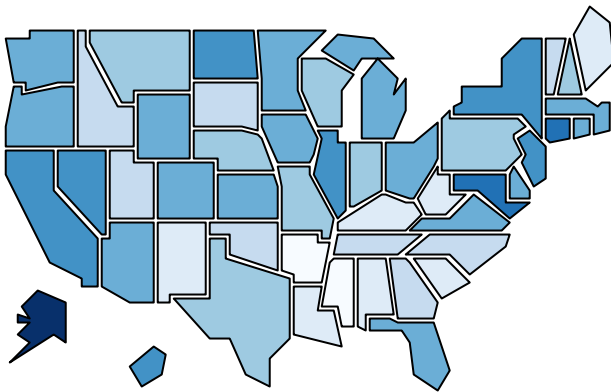
seq(min(tmp.x), max(tmp.x), length.out=10),
    include.lowest=TRUE)

tmp.y <- state.x77[, 'HS Grad']
tmp2.y <- cut(tmp.y, seq(min(tmp.y), max(tmp.y), length.out=10),
    include.lowest=TRUE)

col.fg.x=brewer.pal(9, "Blues")[tmp2.x]
col.fg.y=brewer.pal(9, "Reds")[tmp2.y]

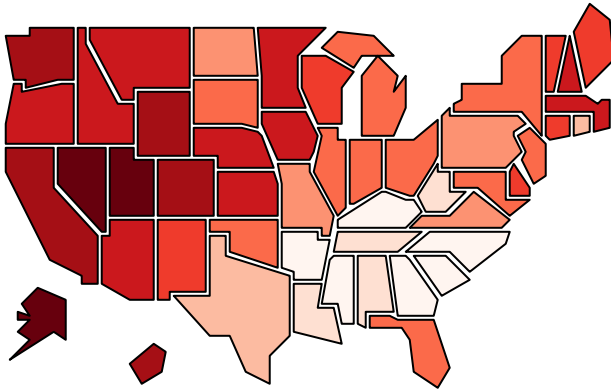
plot(state.vbm, col=col.fg.x,
      main="Income Per Capita")
```

Income Per Capita



```
plot(state.vbm, col=col.fg.y,
      main="Perc. of High School Graduates")
```

Perc. of High School Graduates



Step 4: Using `saveGIF` to create an animated version of the above figure.

```
## Set the time delay between each slide
ani.options(interval=.2)

# Set foreground and background color.
fg.col="black"
bg.col="transparent"

saveGIF({
  #layout(matrix(c(1,2,3,3, 3, 3), 3, 2, byrow = TRUE))
  par(mfrow=c(1,2), pty="s", font.main=1,
      bg=bg.col, fg=fg.col,
      col.axis=fg.col, col.main=fg.col,
      col.lab=fg.col)
  par(mar=c(0,0,2,0), mgp=c(0,0,0))

  tmp.x <- state.x77[, 'Income']
  tmp2.x <- cut(tmp.x, seq(min(tmp.x), max(tmp.x), length.out=10),
               include.lowest=TRUE)

  tmp.y <- state.x77[, 'HS Grad']
  tmp2.y <- cut(tmp.y, seq(min(tmp.y), max(tmp.y), length.out=10),
               include.lowest=TRUE)

  # a random order of states to plot
  order.plot=sample(1:length(tmp.y))

  col.bg=rep(bg.col, length(tmp.y))

  # generate the color of each state depending on the values of
  # x variable and y variable.
  col.fg.x=brewer.pal(9, "Blues")[tmp2.x]
  col.fg.y=brewer.pal(9, "Reds")[tmp2.y]

  for(i in 1:length(order.plot)){
    col.use.x=col.bg
    col.use.y=col.bg
```

```

col.use.x[order.plot[1:i]]=col.fg.x[order.plot[1:i]]
col.use.y[order.plot[1:i]]=col.fg.y[order.plot[1:i]]

plot(state.vbm,col=col.use.x,
      main="Income Per Capita")
plot(state.vbm,col=col.use.y,
      main="Perc. of High School Graduates")

#   par(mar=c(5,4,2,1), mgp=c(3,2,1))
#
#   plot(state.x77[, "Income"], state.x77[, "HS Grad"],
#         xlab="Income",
#         ylab="Perc. of high school graduate",
#         type="n")
#   text(state.x77[order.plot[1:i], "Income"],
#         state.x77[order.plot[1:i], "HS Grad"],
#         state.abb[order.plot[1:i]])
#
}, movie.name="maps1.gif", ani.width=600, ani.height=300)

```

```

## Executing:
## 'convert' -loop 0 -delay 20 Rplot1.png Rplot2.png Rplot3.png
##   Rplot4.png Rplot5.png Rplot6.png Rplot7.png Rplot8.png
##   Rplot9.png Rplot10.png Rplot11.png Rplot12.png Rplot13.png
##   Rplot14.png Rplot15.png Rplot16.png Rplot17.png Rplot18.png
##   Rplot19.png Rplot20.png Rplot21.png Rplot22.png Rplot23.png
##   Rplot24.png Rplot25.png Rplot26.png Rplot27.png Rplot28.png
##   Rplot29.png Rplot30.png Rplot31.png Rplot32.png Rplot33.png
##   Rplot34.png Rplot35.png Rplot36.png Rplot37.png Rplot38.png
##   Rplot39.png Rplot40.png Rplot41.png Rplot42.png Rplot43.png
##   Rplot44.png Rplot45.png Rplot46.png Rplot47.png Rplot48.png
##   Rplot49.png Rplot50.png 'maps1.gif'
## Output at: maps1.gif

```