Making Maps With R

Background: Spatial data are becoming increasingly common, as are the tools available in R to process it. Of course one of the best ways of visualizing spatial data is through a map. Maps need to be well thought out. Not least, the selected colours need to be appropriate and sufficient context is provided through the use of a legend, title, scale bar and north arrow. The worksheet will demonstrate how to produce a map with R that includes all these elements.

Data Requirements:

London Sport Participation Shapefile. Download (requires unzipping)

Install the following packages (if you haven't already done so):

maptools, RcolourBrewer, classInt

Code (Comments are preceded by ##)

```
## Load required packages
library(maptools)
library(RColorBrewer)
library(classInt)

## set the working directory.

setwd("/xxx/xxx/")

## load the shapefile

sport<- readShapePoly("london_sport.shp")

##have a look at the attribute table headings

names(sport)

## Plot map showing the percentage of the population in each borough participating in
regular sports activities.

## select a colour palette and the number of colours you wish to display.
colours <- brewer.pal(5, "Blues")

## we first need to set breaks in the data in order that we have a representative colour
palette. This can be done manually by simply looking at the data and guessing:

#brks<-c(10, 15, 20, 25)

## or (preferably) we can use the classIntervals function in the classInt package:

brks<-classIntervals(sport$Partic_Per, n=5, style="quantile")

##using the plot function you can plot the distribution of the data and view the colours
```

assigned to each point.

```
plot(brks, pal=colours)
```

from this point on we are only interested in the break values, we can therefore extract them from the brks object above:

```
brks<- brks$brks
```

##Now we can produce the map:

```
plot(sport, col=colours[findInterval(sport$Partic_Per, brks,
 all.inside=TRUE)], axes=F)
```

we can add:

```
##a border
box()
```

a title:

```
title(paste ("London Sports Participation"))
```

a north arrow:

```
SpatialPolygonsRescale(layout.north.arrow(1), offset= c(505100,160000), scale = 6000,
plot.grid=F)
```

a legend

```
legend(x=548500, y=164800, legend=leglabs(brks), fill=colours, bty="n")
```

a scale bar:

```
SpatialPolygonsRescale(layout.scale.bar(), offset= c(503800,154800), scale= 10000, fill=
c("transparent", "black"), plot.grid= F)
```

and some annotations:

```
text(509000, 153500, "10KM", cex= 1)
text(534000,152000, "Boundary Data Crown Copyright Ordnance Survey 2009.", cex= 1)
text(556500, 166000, "% Participation", cex= 1)
```