Data Science and R – Lab 9

0. R Markdown

Open a new R Markdown file using `File –> New File –> R Markdown` from the menu. Note: If this option is NOT available, install R markdown first:

```
install.packages("rmarkdown")
```

Delete all the lines in this file, except for the header (top 5 lines).

Use `Insert -> R` when you want to add new chunks of R code. Shortcut: `Ctrl+Alt+I` (Windows) or `Cmd+Option+I` (macOS)

Ensure the package('MASS') is installed:

```
install.packages('MASS')
library(MASS)
```

1. Histograms

a) Plot a histogram of the `geyser$waiting` values using `hist()`. Do not change any labels yet.

Code: _____

b) Tweak the x, y and title labels by adding `xlab`, `ylab` and `main` parameters to the `hist()` function. Choose also a suitable colour for your histogram.

Code: _____

c) Observe the break of values in the x-axis. What is the bin width of the histogram (size of each chunk in x axis)?

Answer:_____

d) Change the break values to `break=40:110` in `hist()` and replot the histogram. What is the width of the bin now? How would you change the bin width to 2?

Answer:_____

Code:_____

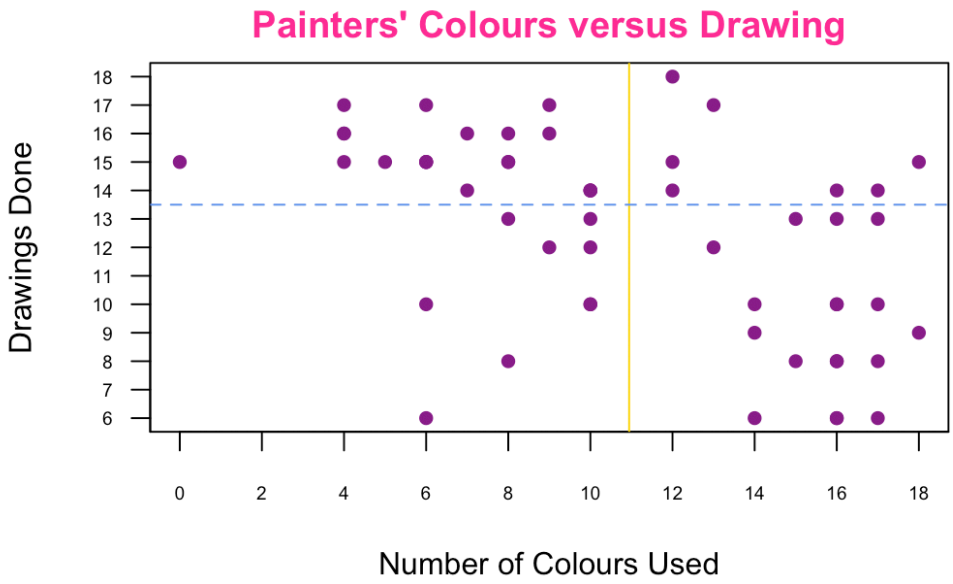
e) Keeping the bin width to 2, change the values in the x-axis by setting the `xaxt` parameter in hist() to `xaxt='n'`. Now add a line after plot as follows:

```
axis(1, at=seq(40,110,by=4), cex.axis=0.5)
```

Figure out what this line is doing by observing the plot. Try to change the values in the y axis with `yaxt='n'` and `axis(2, …)` with suitable parameters

Answer:_____

2. Scatter Plots



The aim is to get a plot as above, follow the steps below:

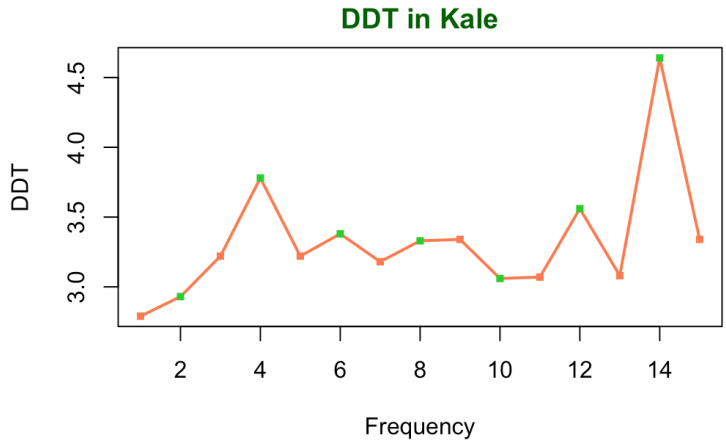
a) Using the dataset `painters`, plot `Colour` against the `Drawing`. The color of the dots are `darkmagenta` and the `pch` value is 16.

b) Change the x, y and title labels to the ones given above, the color of the title is `deeppink`

c) Add a `gold` vertical line which represents the `mean` of `Colours` and a `cornflowerblue` horizontal line representing the `median` of `Drawings`

d) Change the values in the x and y axes by setting `xaxt` and `yaxt` to 'n' in plot and then adding two axis functions (1 for x-axis and 2 for y-axis). Set their `cex.axis` to 0.6. Finally rotate the values in the y axis by setting `las=1`

3. Line Plots



Plot the graph above with the given information below:

Dataset: `DDT` Parameters: Title color is `darkgreen`, `lwd` (line width) set to 2, `pch`=15, `cex`=0.7 `col` is a vector of 2 colours (`coral` and `limegreen`).