

## Using ggplot: Practical

1. Load the ggplot2 library (install it if you have to) and the diamonds dataset using `data()`
2. Explore the dataset using `dim()`, `str()` and `help()`, which variables are continuous, which variables are discrete? Is this dataset ready for plotting with ggplot?
3. Use ggplot to plot a scatterplot of the relationship between the diamonds' carat and their price
4. Make all dots darkblue and set the alpha value to 0.1
5. Visualize the influence of the color of a diamond on its price by mapping the diamond color to the color aesthetic
6. Use a ggplot barplot to visualize diamond clarity depending on color, map diamond color to x and diamond clarity to fill
7. Create a boxplot of the carat of a diamond based on its clarity and add whiskers using `stat_boxplot`
8. Add a `geom_point` layer to the previous plot mapping the diamonds price to the color
9. Create a histogram of the price of the diamonds and separate the histograms into facets using diamond color, choose a good binwidth or number of bins
10. Create a grid of facets of the same histogram by comparing both color and cut
11. Use `'aggregate(diamonds, by = list(cut = diamonds$cut, color = diamonds$color), mean)'` to calculate the mean of all variables by cut and color. Create a heatmap of the mean prices by cut and color using `geom_tile`
12. Change the title of the heatmap to "Average prices"
13. Change the gradient of the fill scale using `'scale_fill_gradient2'`. Have it go from darkblue to white to darkred, set the midpoint to 4500
14. Choose and add a theme to the heatmap, or create a theme yourself using the options listed at <http://ggplot2.tidyverse.org/reference/theme.html>