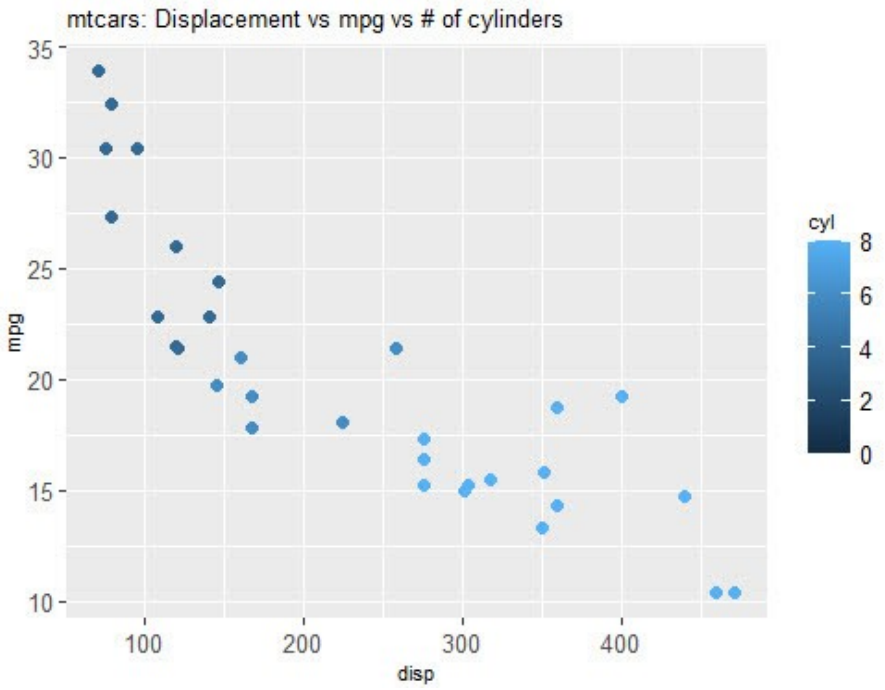
Making Your First 3D Plot
rayshader mtcars-style

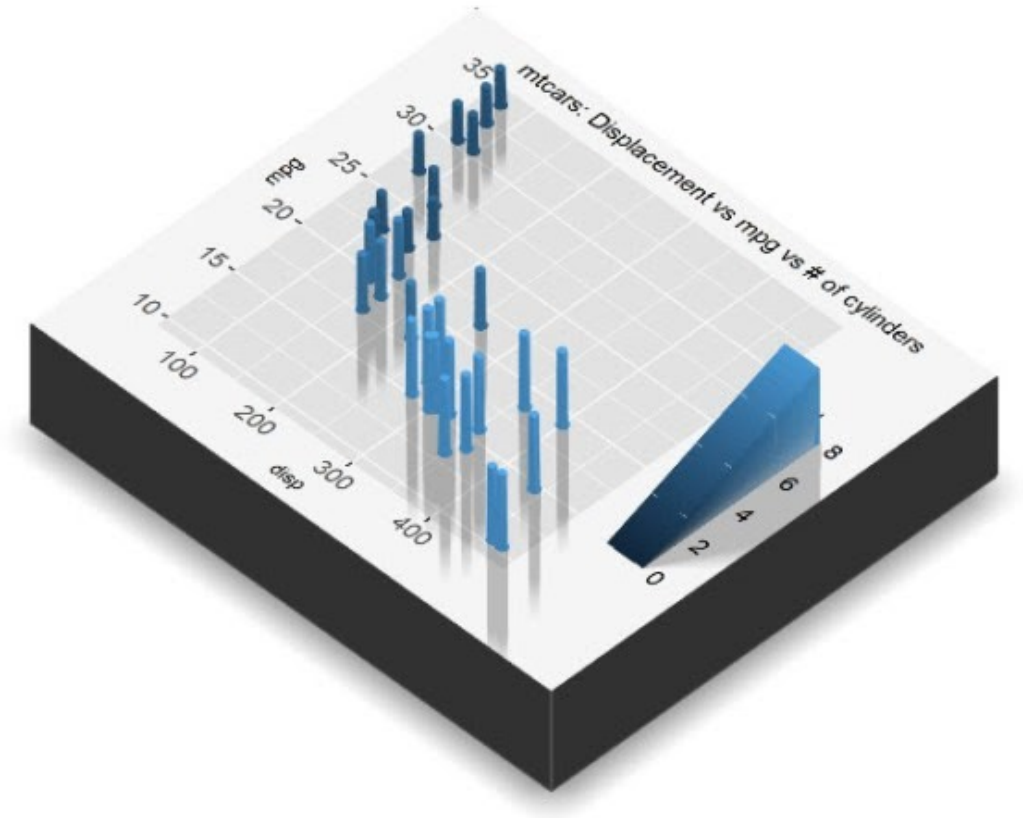
Start by making a ggplot w/ mtcars displ vs mpg

```
g1 <- mtcars %>%
    ggplot(aes(disp, mpg, color = cyl)) +
    geom_point(size=2) +
    scale_color_continuous(limits=c(0,8)) +
    ggtitle("mtcars: Displacement vs mpg vs # of cylinders") +
    theme(title = element_text(size=8),
          text = element_text(size=12))
```



Then unleash the AWESOME POWER 🔥 of `rayshader` to make it 3D ⛰

```
# rayshader
g1 %>%
    plot_gg(
        height        = 3,
        width         = 3.5,
        multicore     = TRUE,
        pointcontract = 0.7,
        soliddepth    = -200
    )
```



Making Elevation Plots
rayshader heatmap-style

What about heatmaps and volcano plots?

Sometimes you have heatmap formatted data where you have a matrix:

- x/y-axis are the rows/columns
- depth (z-axis) is the values in the matrix.

```
> volcano
      [,1] [,2] [,3] [,4] [,5] [,6] [,7] [,8] [,9] [,10] [,11] [,12]
 [1,]  100  100  101  101  101  101  101  100  100   100   101   101
 [2,]  101  101  102  102  102  102  102  101  101   101   102   102
 [3,]  102  102  103  103  103  103  103  102  102   102   103   103
 [4,]  103  103  104  104  104  104  104  103  103   103   103   104
 [5,]  104  104  105  105  105  105  105  104  104   103   104   104
 [6,]  105  105  105  106  106  106  106  105  105   104   104   105
 [7,]  105  106  106  107  107  107  107  106  106   105   105   106
 [8,]  106  107  107  108  108  108  108  107  107   106   106   107
 [9,]  107  108  108  109  109  109  109  108  108   107   108   108
[10,]  108  109  109  110  110  110  110  109  109   108   110   110
[11,]  109  110  110  111  111  111  111  110  110   110   112   114
[12,]  110  110  111  113  112  111  113  112  112   114   116   119
[13,]  110  111  113  115  114  113  114  114  115   117   119   121
[14,]  111  113  115  117  116  115  116  117  117   119   121   124
[15,]  114  115  117  117  117  118  119  119  120   121   124   126
[16,]  116  118  118  118  120  121  121  122  122   123   125   128
```

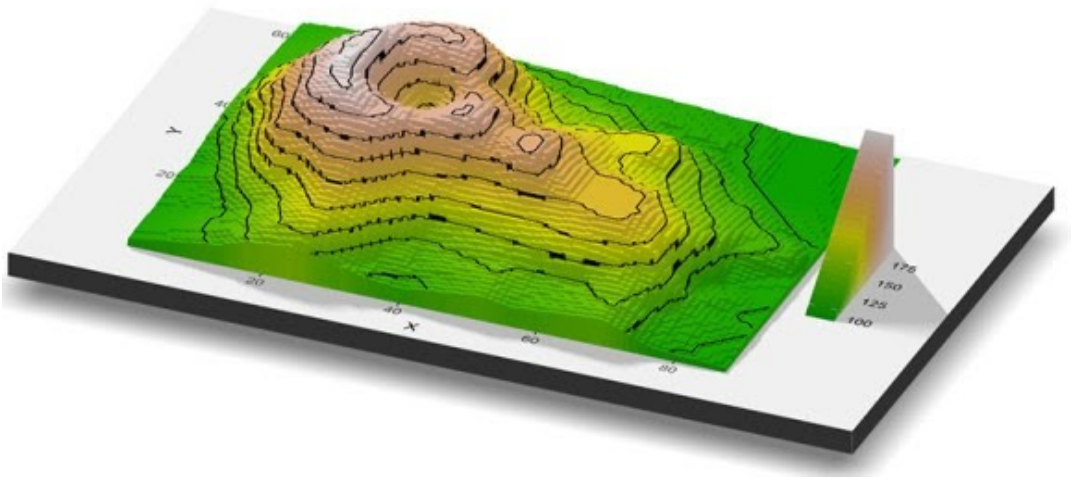
We can handle this `matrix` data format with:

- A little bit of data wrangling with `dplyr`.
- Then make swiftly make a `ggplot`.
- Then just like before, use `rayshader`.

```r
# dplyr (data wrangling) - DS4B 101-R, Weeks 2&3
volcano_tbl <- volcano %>%
    as_tibble(.name_repair = "minimal") %>%
    set_names(str_c("V", seq_along(names(.)))) %>%
    rowid_to_column(var = "x") %>%
    pivot_longer(
        cols      = contains("V"),
        names_to  = "y",
        values_to = "value"
    ) %>%
    mutate(y = str_remove(y, "^V") %>% as.numeric())

# ggplot (visualization) - DS4B 101-R, Week 4
g2 <- volcano_tbl %>%
    ggplot(aes(x = x, y = y, fill = value)) +
    geom_tile() +
    geom_contour(aes(z = value), color = "black") +
    scale_x_continuous("X", expand = c(0,0)) +
    scale_y_continuous("Y",expand = c(0,0)) +
    scale_fill_gradientn("Z", colours = terrain.colors(10)) +
    coord_fixed()

# rayshader

g2 %>%
    plot_gg(
        multicore = TRUE,
        raytrace = TRUE,
        width = 7,
        height = 4,
        scale = 300,
        windowsize = c(1400, 866),
        zoom = 0.6,
        phi = 30,
        theta = 30
    )
```

Full code in the video Github Repository

And BOOM! We have a 3D Elevation Heat-Map Plot! ⛰⛰⛰



Full code in the video Github Repository