```r
1   # a love letter to r and tidyverse
2   # fred duong
3
4   library(tidyverse)
5   library(grid)
6   library(extrafont)
7   font_import()
8   loadfonts(device = "win")
9
10  # gradient function from Kamil Slowikowski
11  # https://stackoverflow.com/questions/30136725/plot-background-colour-in-gradient
12  make_gradient <- function(deg = 45, n = 100, cols = blues9) {
13    cols <- colorRampPalette(cols)(n + 1)
14    rad <- deg / (180 / pi)
15    mat <- matrix(
16      data = rep(seq(0, 1, length.out = n) * cos(rad), n),
17      byrow = TRUE,
18      ncol = n
19    ) +
20      matrix(
21        data = rep(seq(0, 1, length.out = n) * sin(rad), n),
22        byrow = FALSE,
23        ncol = n
24      )
25    mat <- mat - min(mat)
26    mat <- mat / max(mat)
27    mat <- 1 + mat * n
28    mat <- matrix(data = cols[round(mat)], ncol = n)
29    grid::rasterGrob(
30      image = mat,
31      width = unit(1, "npc"),
32      height = unit(1, "npc"),
33      interpolate = TRUE
34    )
35
36    # symbols.csv contains hand-selected r and tidyverse syntax
37    symbols<-read_csv("symbols.csv", na=character())[[1]]
38
39    # input number of rows and columns desired
40    nrows=12
41    ncols=9
42
43    df<-tibble(x=rep(1:ncols, each=nrows),
44               y=rep(1:nrows, ncols),
45               random=rbinom((ncols*nrows), 1, .3), # generate probability
46               label=ifelse(random==1,
47                            '+',                       # use probability to display plus sign
48                            # else, display randomly selected symbols
49                            # when there is no plus sign
50                            sample(symbols, (ncols*nrows), replace=TRUE)
51               )
52    )
53
54    # make the gradient
55    gradient <- make_gradient(deg = 45, n = 500, c("#58A9D6", "#947BB1", "#D35768"))
56
57
58    ggplot(df, aes(x=x, y=y, label=label))+
59      annotation_custom(grob = gradient, # gradient background
60                        xmin = -Inf, xmax = Inf,
61                        ymin = -Inf, ymax = Inf ) +
62      geom_text(family = "Consolas", color="white", show.legend = FALSE) +
63      theme_void()
64
65    # 1-in border except 1.5-in bottom, for title
66    ggsave("gradient.png", width=6.5, height=8.5, dpi=300)
67
```

a love letter to r and tidyverse
fred duong, 2019