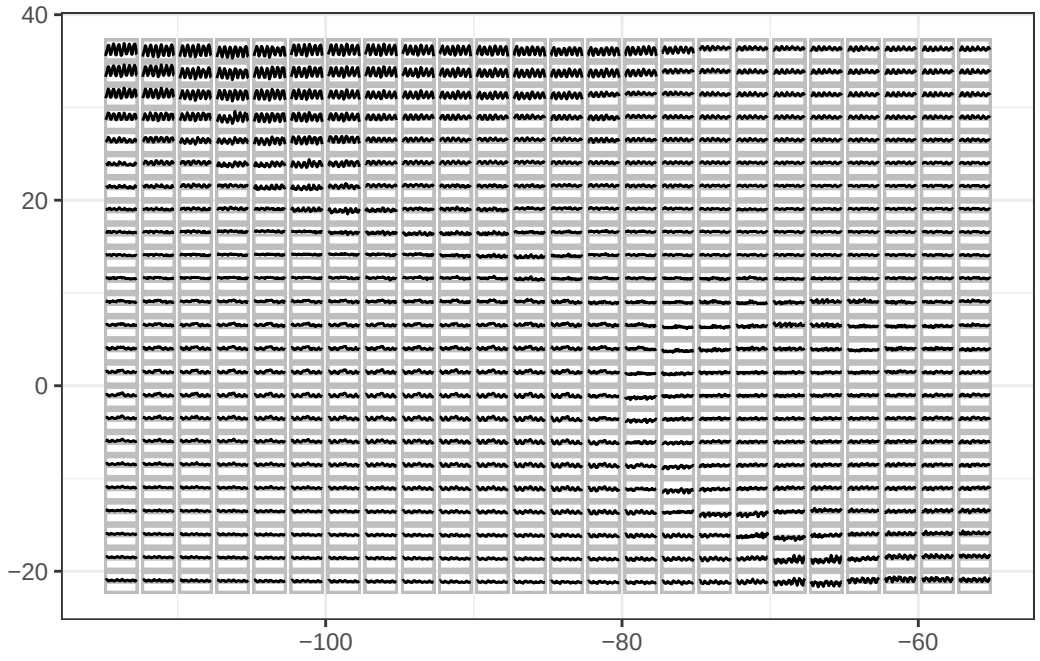
GSOC Glyph Maps Tests

Test 1 (Easy):

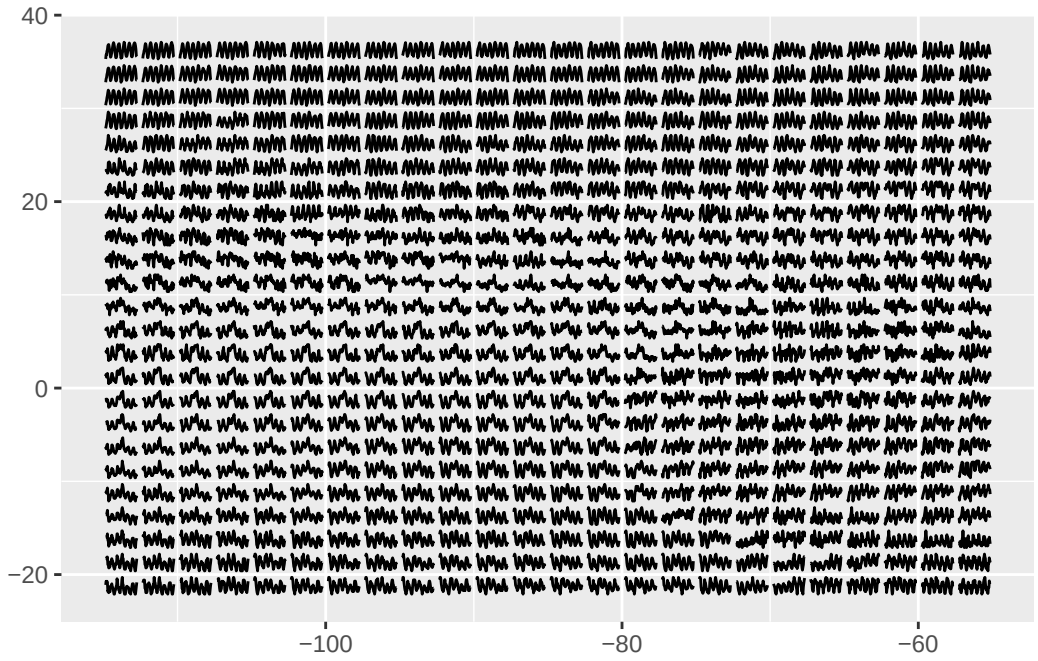
Download the `cubble` package and run the glyph map examples (`?geom_glyph`).

```
if (!require("cubble")) {
  install.packages("cubble")
  library(cubble)
}
library(tidyverse)
```

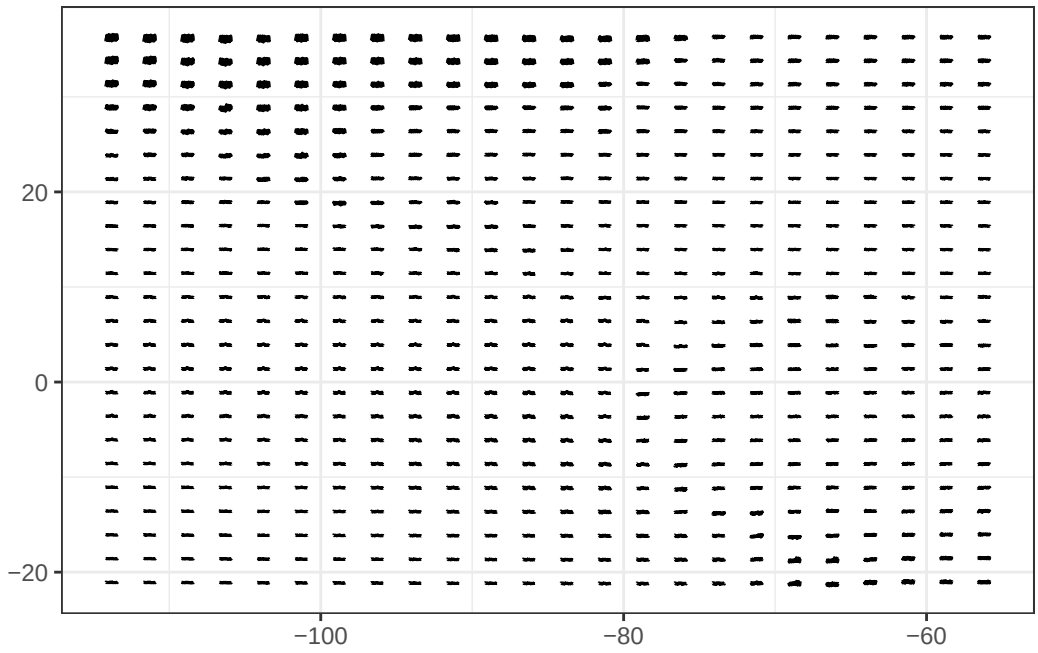
```
# basic glyph map with reference line and box---------------
p <- ggplot(data = GGally::nasa,
       aes(x_major = long, x_minor = day,
           y_major = lat, y_minor = surftemp)) +
  geom_glyph_box() +
  geom_glyph_line() +
  geom_glyph() +
  theme_bw()
p
```



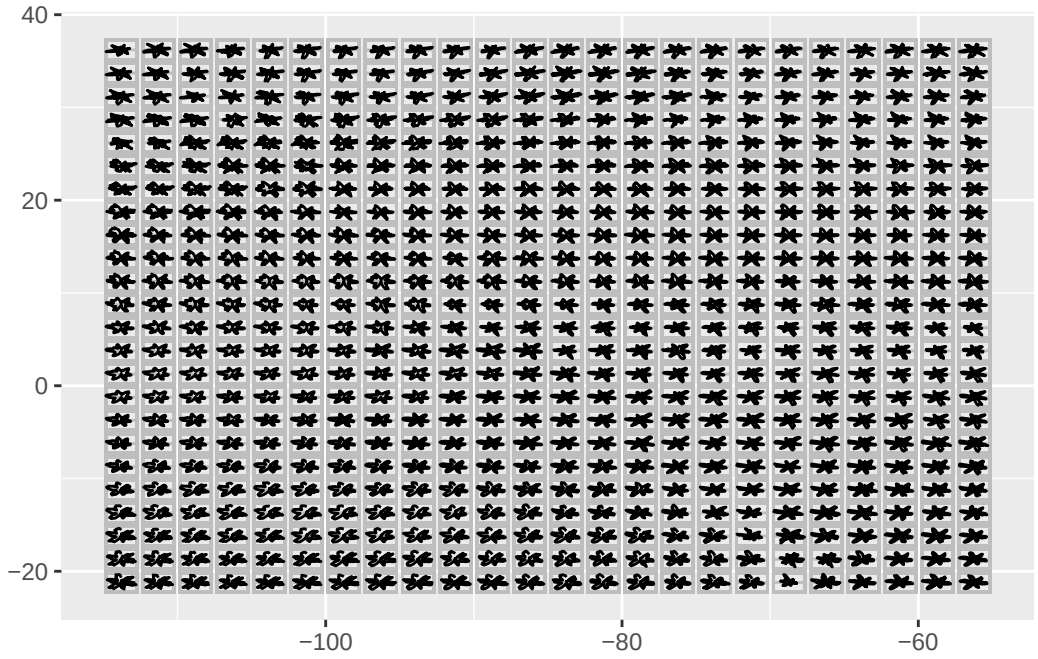

```
# rescale on each individual glyph ---------------
p <- ggplot(data = GGally::nasa,
       aes(x_major = long, x_minor = day,
           y_major = lat, y_minor = surftemp)) +
  geom_glyph(global_rescale = FALSE)
p
```




```
# adjust width and height with relative & absolute value ----------------
p <- ggplot() +
  geom_glyph(data = GGally::nasa,
             aes(x_major = long, x_minor = day,
                 y_major = lat, y_minor = surftemp),
                 width = rel(0.8), height = 1) +
   theme_bw()
p
```




```
# apply a re-scaling on Y and use polar coordinate
p <-
  GGally::nasa %>%
  ggplot(aes(x_major = long, x_minor = day,
             y_major = lat, y_minor = ozone)) +
    geom_glyph_box(fill=NA) +
    geom_glyph_line() +
    geom_glyph(y_scale = GGally::range01, polar = TRUE)
p
```



Test 2 (Medium):

read the Geoms section in the ggplot2 package reference and other geoms available in the ggplot2 extensions. Create a example that is applicable to be used as a glyph on a map.

I think all of the following geoms can be appropriately used as glyphs in order to visualize spatio-temporal data.

```
library(palmerpenguins)
```

```
Warning: package 'palmerpenguins' was built under R version 4.3.3
```

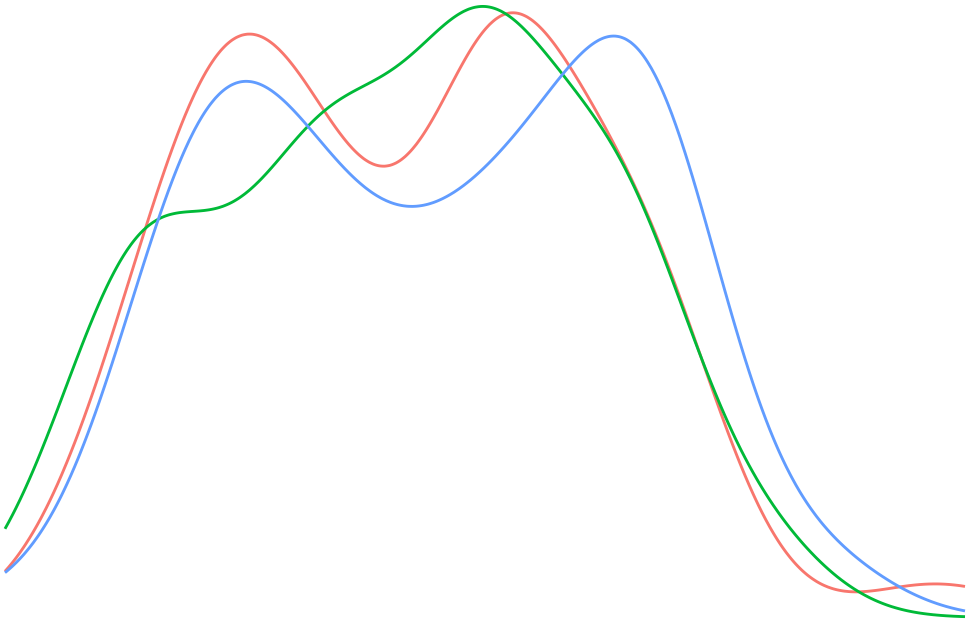
```
library(ggridges)
```

```
Warning: package 'ggridges' was built under R version 4.3.3
```

```
# install.packages("ggridges")

penguins_grouped <- penguins |>
```

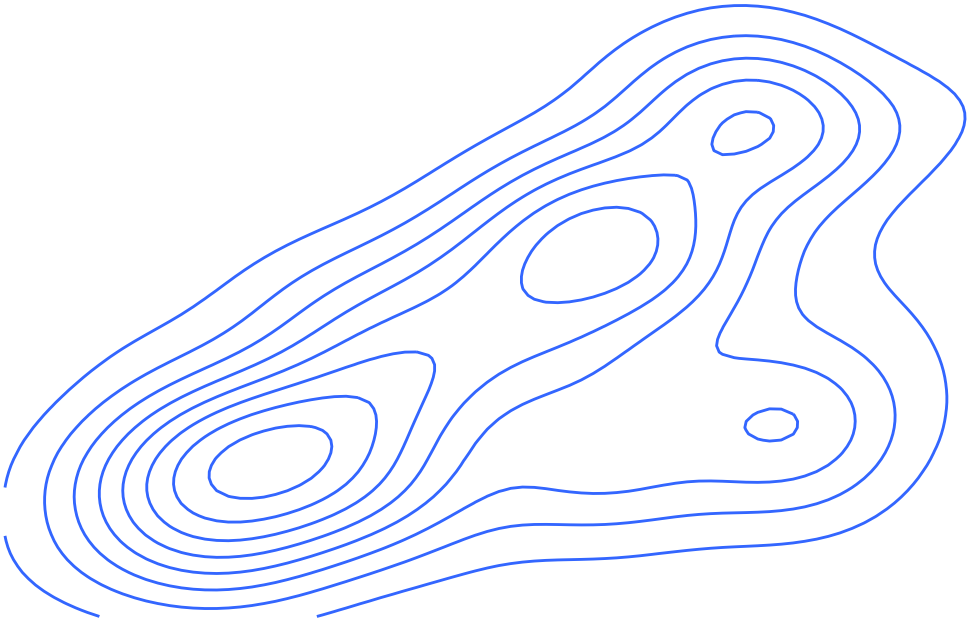
```
  group_by(year) |>
  summarise(
    mean_bill = mean(bill_length_mm, na.rm = TRUE),
    mean_mass = mean(body_mass_g, na.rm = TRUE)
  )

# Density Plots
ggplot(penguins) +
  geom_density(aes(x = bill_length_mm, group = year, color = factor(year)), show.legend =
  theme_void()
```

```
Warning: Removed 2 rows containing non-finite values (`stat_density()`).
```

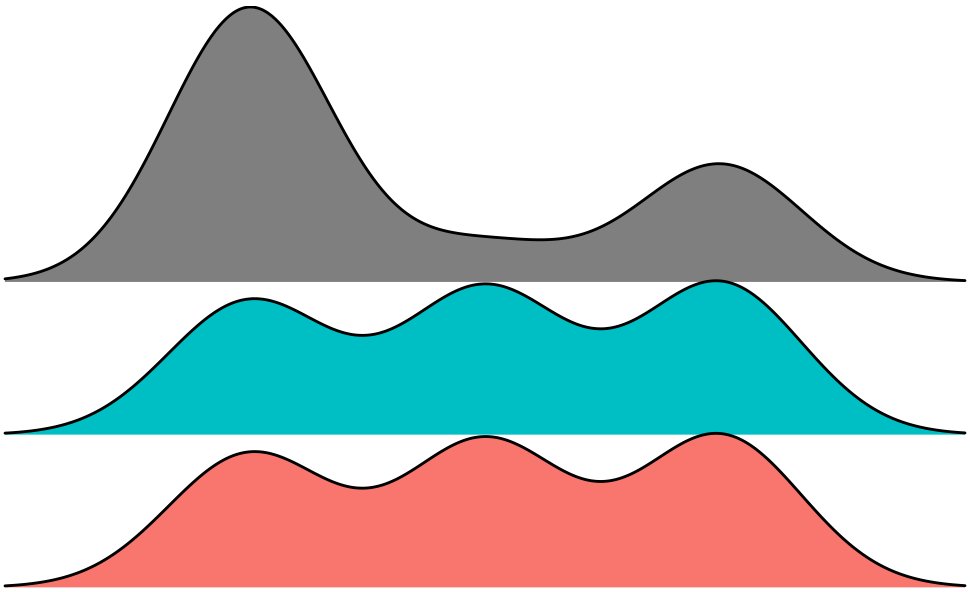


```
# Density Plots
ggplot(penguins) +
  geom_density_2d(aes(x = bill_length_mm, y = body_mass_g), show.legend = FALSE) +
  theme_void()
```

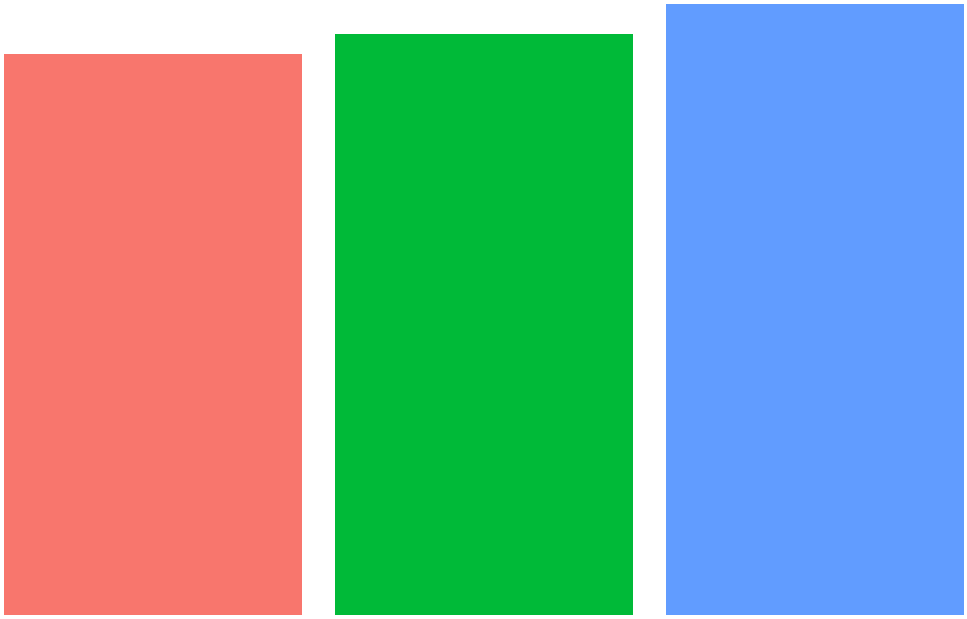
```
Warning: Removed 2 rows containing non-finite values (`stat_density2d()`).
```



```r
# Ridgeline plots
ggplot(penguins) +
  geom_density_ridges(aes(x = year, y = sex, fill = sex), show.legend = FALSE) +
  theme_void()
```



```r
# Bar Chart
ggplot(penguins) +
  geom_bar(aes(x = year, fill = factor(year), group = year), show.legend = FALSE) +
  theme_void()
```



Test 3 (Hard):