Change Geometric Plot Features

Step 1: Set the theme and load your data.

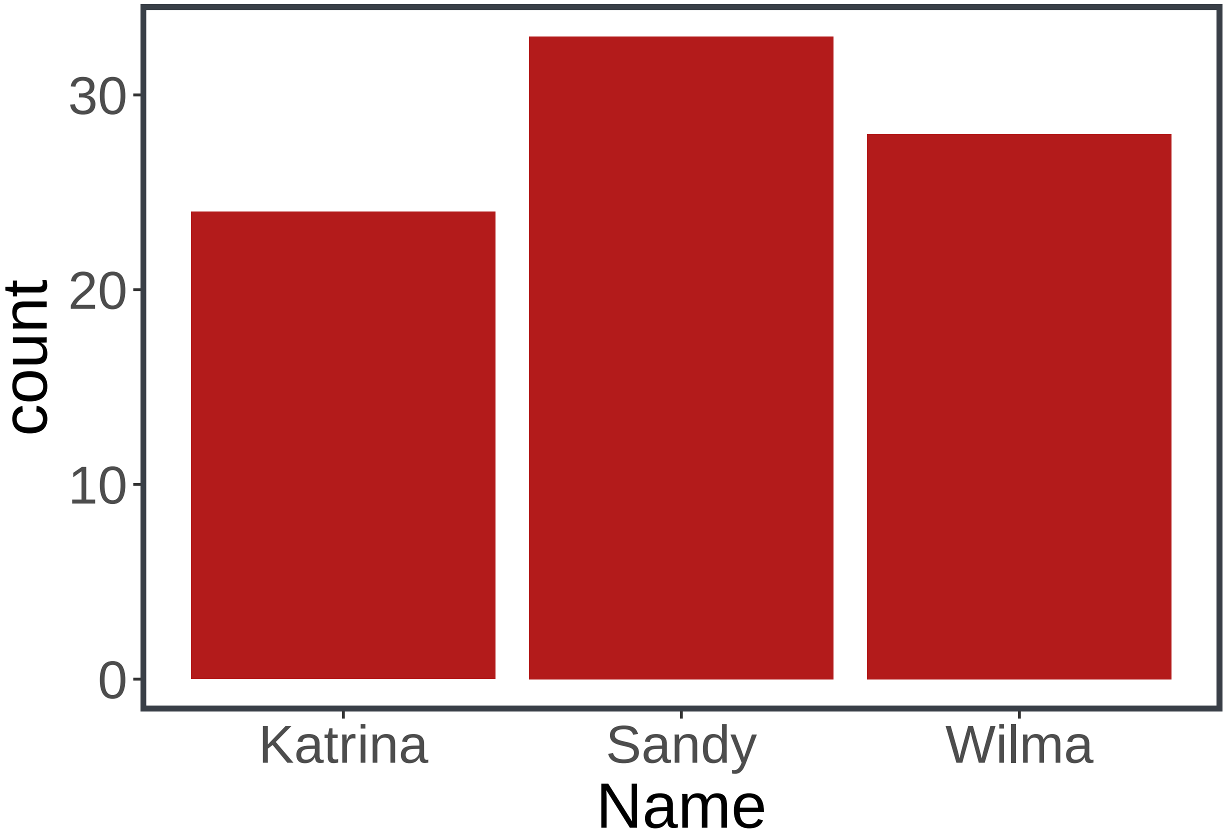
```r
# 1) Set up the theme used in these videos:
library(ggplot2)

theme <-  theme(plot.margin = margin(5, 5, 5, 5, "pt"),
          panel.grid.major = element_blank(),
          panel.grid.minor = element_blank(),
          panel.background = element_blank(),
          panel.border = element_rect(colour = "#393f47", fill = NA, size = 2),
          axis.text = element_text(size = 20),
          axis.title.x = element_text(size = 24),
          axis.title.y = element_text(size = 24),
          plot.title = element_text(face = "bold", size = 30))

ourTheme <- list(theme,

scale_color_manual(values = c('#393f47', '#b31b1b', '#fbb040', '#92b2c4')),
        scale_fill_manual(values = c('#b31b1b', '#cecece', '#393f47', '#92b2c4', '#fbb040')))

# 2) Load data from the National Oceanic and Atmospheric Administration's
# Atlantic hurricane database and convert variables to factors where necessary:

library(tidyverse)

# read in the storm data:
storms <- read.csv("storms.csv")

# set the storm category to be a factor:
storms$Category <- factor(storms$Category, levels = -1:5)

# set the measurement date/time to be a factor:
storms$Date <- factor(storms$Date, levels = unique(storms$Date))

# look at the storm data
view(storms)

# 3) Filter the data to only use observations for Hurricane Sandy:

sandy <- storms %>% filter(Name == "Sandy")

# 4) Create a data set with observations only for Hurricanes Katrina, Sandy, and Wilma:

sampleStorms <- storms %>% filter(Name %in% c("Katrina", "Sandy", "Wilma"))

head(sampleStorms)
```

```
##      Name            Date              Status Category Wind Pressure
## 1 Katrina 8/23/2005 18:00 tropical depression       -1   30     1008
## 2 Katrina  8/24/2005 0:00 tropical depression       -1   30     1007
## 3 Katrina  8/24/2005 6:00 tropical depression       -1   30     1007
## 4 Katrina 8/24/2005 12:00      tropical storm        0   35     1006
## 5 Katrina 8/24/2005 18:00      tropical storm        0   40     1003
## 6 Katrina  8/25/2005 0:00      tropical storm        0   45     1000
##   TS_diameter HU_diameter
## 1      0.0000           0
## 2      0.0000           0
## 3      0.0000           0
## 4     69.0468           0
## 5     69.0468           0
## 6     69.0468           0
```

Step 2: Make a barplot of the number of observations for each storm.

Using geom_bar() instead of geom_point() makes the geometry of this plot a bar. Since this is a barplot of number of observations, there is no need to specify a y variable in the aesthetic function because R does this calculation for you. The color of the bars is specified by the argument fill:

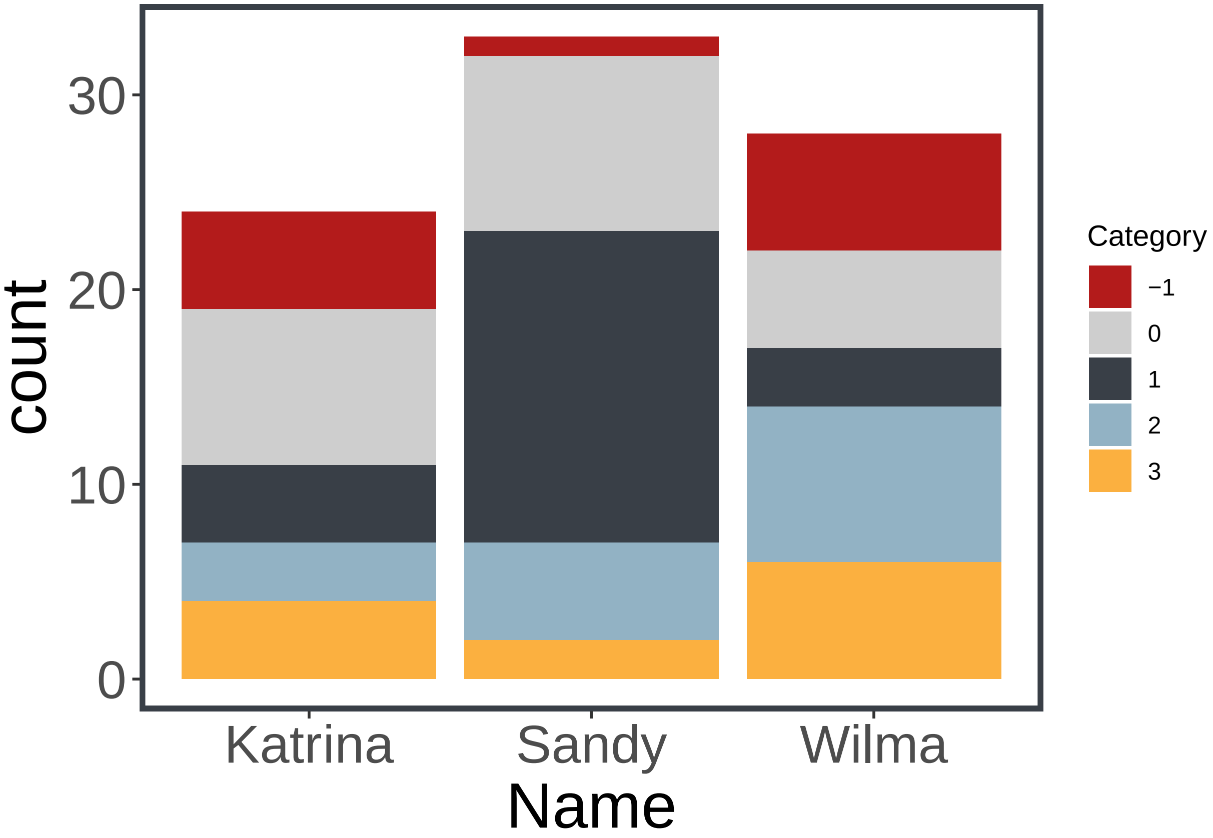
```
# use geom_bar() for barplots
ggplot(sampleStorms, aes(x = Name)) +
        geom_bar(fill = '#b31b1b') +
        ourTheme
```



Step 3: Create a stacked barplot.

To create a stacked barplot, you can adjust the fill argument within the aes() function. The groups within the barplot are created by setting fill = Category:

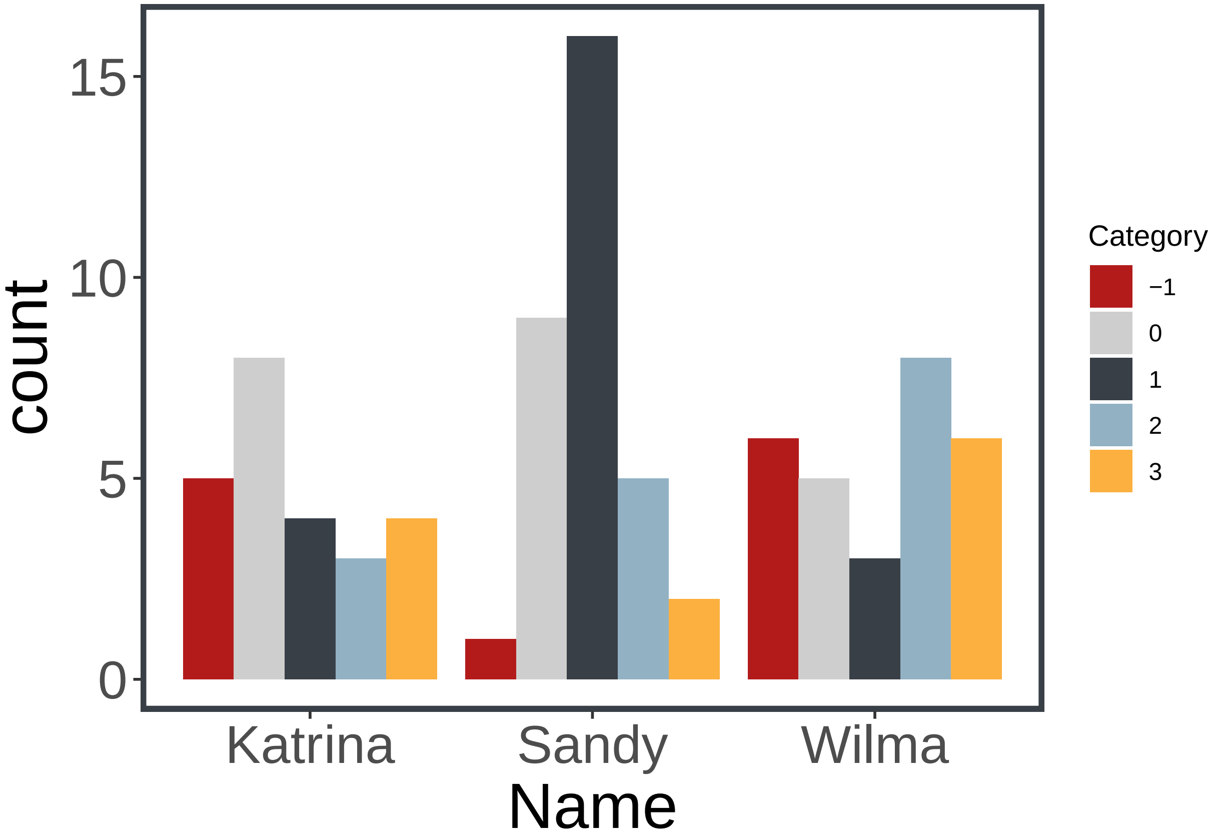
```
ggplot(sampleStorms, aes(x = Name, fill = Category)) +
        geom_bar() +
        ourTheme
```



Step 4: Create a side-by-side barplot.

Adding the argument position = "dodge" within the geom_bar() function makes the barplot a side-by-side barplot, instead of a stacked barplot:

```
ggplot(sampleStorms, aes(x = Name, fill = Category)) +
        geom_bar(position = "dodge") +
        ourTheme
```

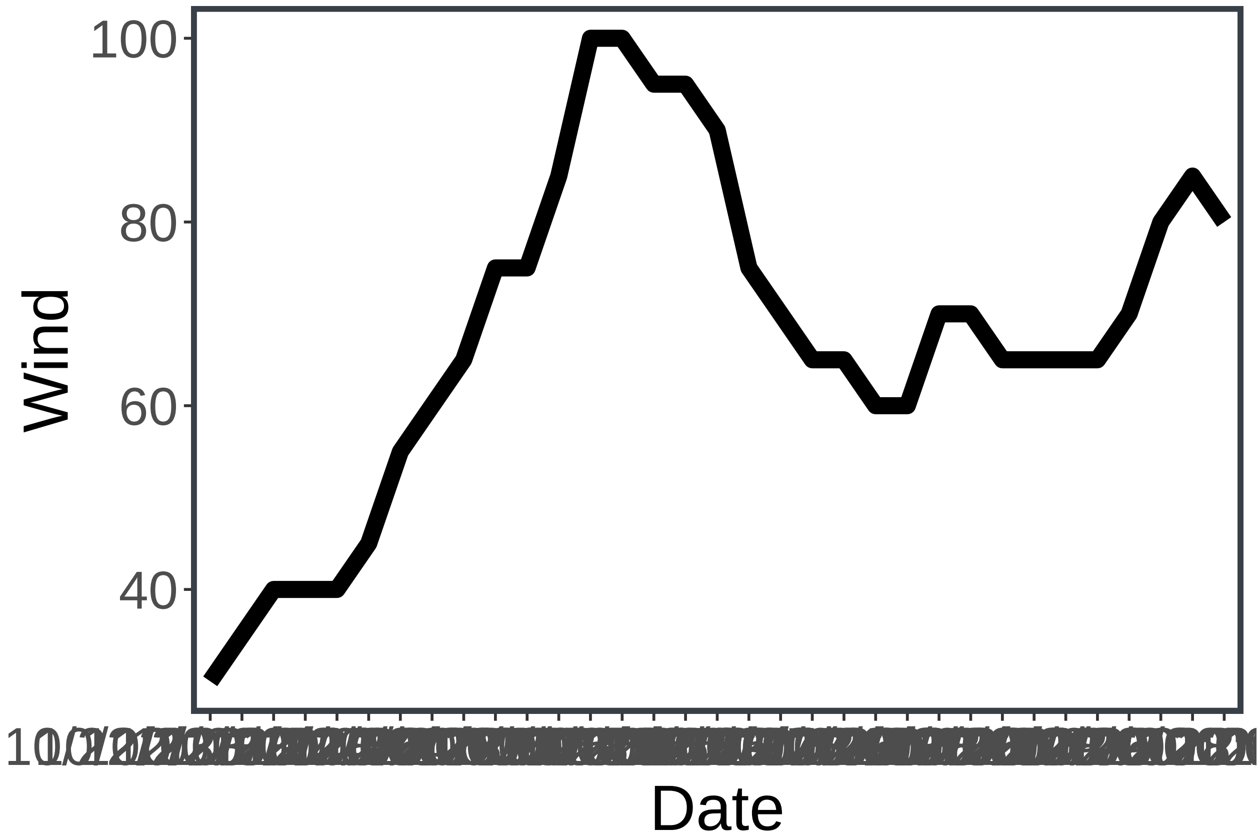


Step 5: Make a line plot of wind speed over time for Hurricane Sandy.

Use the geom_line() function to make a line plot. Make sure to set group = 1 within the aes() function since the x-axis variable is a factor:

```
ggplot(sandy, aes(x = Date, y = Wind, group = 1)) +
        geom_line(size = 3) +
        ourTheme
```

```
## Warning: Using ‘size‘ aesthetic for lines was deprecated in ggplot2 3.4.0.
## i Please use ‘linewidth‘ instead.
## This warning is displayed once every 8 hours.
## Call ‘lifecycle::last_lifecycle_warnings()‘ to see where this warning was
## generated.
```


Wind
100
80
60
40
Date