
```
1 # Create a blank visualization
2
3 votes <- read.csv("votes.csv")
4
5 ggplot()
```

```
1 # Supply data
2
3 votes <- read.csv("votes.csv")
4
5 ggplot(votes)
```

```
1 # Add first geometry
2
3 votes <- read.csv("votes.csv")
4
5 ggplot(votes) +
6   geom_col()
```

```
1 # Add x and y aesthetics
2
3 votes <- read.csv("votes.csv")
4
5 ggplot(votes, aes(x = candidate, y = votes)) +
6   geom_col()
```

```
1 # Adjust y scale
2
3 votes <- read.csv("votes.csv")
4
5 ggplot(votes, aes(x = candidate, y = votes)) +
6   geom_col() +
7   scale_y_continuous(limits = c(0, 250))
```

```
1 # Add labels
2
3 votes <- read.csv("votes.csv")
4
5 ggplot(votes, aes(x = candidate, y = votes)) +
6   geom_col() +
7   scale_y_continuous(limits = c(0, 250)) +
8   labs(
9     x = "Candidate",
10    y = "Votes",
11    title = "Election Results"
12  )
```

```
1 # Add fill aesthetic mapping for geom_col
2
3 votes <- read.csv("votes.csv")
4
5 ggplot(votes, aes(x = candidate, y = votes)) +
6   geom_col(aes(fill = candidate)) +
7   scale_y_continuous(limits = c(0, 250)) +
8   labs(
9     x = "Candidate",
10    y = "Votes",
11    title = "Election Results"
12  )
```

```
1 # Use viridis scale to design for color blindness
2
3 votes <- read.csv("votes.csv")
4
5 ggplot(votes, aes(x = candidate, y = votes)) +
6   geom_col(aes(fill = candidate)) +
7   scale_fill_viridis_d("Candidate") +
8   scale_y_continuous(limits = c(0, 250)) +
9   labs(
10    x = "Candidate",
11    y = "Votes",
12    title = "Election Results"
13  )
```



```
1 # Adjust ggplot theme
2
3 votes <- read.csv("votes.csv")
4
5 ggplot(votes, aes(x = candidate, y = votes)) +
6   geom_col(aes(fill = candidate)) +
7   scale_fill_viridis_d("Candidate") +
8   scale_y_continuous(limits = c(0, 250)) +
9   labs(
10    x = "Candidate",
11    y = "Votes",
12    title = "Election Results"
13  ) +
14  theme_classic()
```

```
1 # Save file
2
3 votes <- read.csv("votes.csv")
4
5 p <- ggplot(votes, aes(x = candidate, y = votes)) +
6   geom_col(aes(fill = candidate)) +
7   scale_fill_viridis_d("Candidate") +
8   scale_y_continuous(limits = c(0, 250)) +
9   labs(
10    x = "Candidate",
11    y = "Votes",
12    title = "Election Results"
13  ) +
14  theme_classic()
15
16 ggsave(
17   "votes.png",
18   plot = p,
19   width = 1200,
20   height = 900,
21   units = "px"
22 )
```

```
1 # Introduce geom_point
2
3 load("candy.RData")
4
5 ggplot(
6   candy,
7   aes(x = price_percentile, y = sugar_percentile)
8 ) +
9   geom_point()
```

```
1 # Add labels and theme
2
3 load("candy.RData")
4
5 ggplot(
6   candy,
7   aes(x = price_percentile, y = sugar_percentile)
8 ) +
9   geom_point() +
10  labs(
11    x = "Price",
12    y = "Sugar",
13    title = "Price and Sugar"
14  ) +
15  theme_classic()
```

```
1 # Introduce geom_jitter
2
3 ggplot(
4   candy,
5   aes(x = price_percentile, y = sugar_percentile)
6 ) +
7   geom_jitter() +
8   labs(
9     x = "Price",
10    y = "Sugar",
11    title = "Price and Sugar"
12 ) +
13 theme_classic()
```

```
1 # Introduce size and color aesthetic
2
3 ggplot(
4   candy,
5   aes(x = price_percentile, y = sugar_percentile)
6 ) +
7   geom_jitter(
8     color = "darkorchid",
9     size = 2
10  ) +
11  labs(
12    x = "Price",
13    y = "Sugar",
14    title = "Price and Sugar"
15  ) +
16  theme_classic()
```

```
1 # Introduce point shape and fill color
2
3 ggplot(
4   candy,
5   aes(x = price_percentile, y = sugar_percentile)
6 ) +
7   geom_jitter(
8     color = "darkorchid",
9     fill = "orchid",
10    shape = 21,
11    size = 2
12 ) +
13   labs(
14     x = "Price",
15     y = "Sugar",
16     title = "Price and Sugar"
17 ) +
18   theme_classic()
```

```
1 # Visualize with geom_point
2
3 load("anita.RData")
4
5 ggplot(anita, aes(x = timestamp, y = wind)) +
6   geom_point()
```

```
1 # Introduce geom_line
2
3 load("anita.RData")
4
5 ggplot(anita, aes(x = timestamp, y = wind)) +
6   geom_line()
```

```
1 # Combine geom_line and geom_point
2
3 load("anita.RData")
4
5 ggplot(anita, aes(x = timestamp, y = wind)) +
6   geom_line() +
7   geom_point(color = "deepskyblue4")
```

```
1 # Experiment with geom_line and geom_point aesthetics
2
3 load("anita.RData")
4
5 ggplot(anita, aes(x = timestamp, y = wind)) +
6   geom_line(
7     linetype = 1,
8     linewidth = 0.5
9   ) +
10  geom_point(
11    color = "deepskyblue4",
12    size = 2
13  )
```

```
1 # Add labels and adjust theme
2
3 load("anita.RData")
4
5 ggplot(anita, aes(x = timestamp, y = wind)) +
6   geom_line(
7     linetype = 1,
8     linewidth = 0.5
9   ) +
10  geom_point(
11    color = "deepskyblue4",
12    size = 2
13  ) +
14  labs(
15    y = "Wind Speed (Knots)",
16    x = "Date",
17    title = "Hurricane Anita"
18  ) +
19  theme_classic()
```

```
1 # Add horizontal line to demarcate hurricane status
2
3 load("anita.RData")
4
5 ggplot(anita, aes(x = timestamp, y = wind)) +
6   geom_line(
7     linetype = 1,
8     linewidth = 0.5
9   ) +
10  geom_point(
11    color = "deepskyblue4",
12    size = 2
13  ) +
14  geom_hline(
15    linetype = 3,
16    yintercept = 64
17  ) +
18  labs(
19    y = "Wind Speed (Knots)",
20    x = "Date",
21    title = "Hurricane Anita"
22  ) +
23  theme_classic()
```