

Visuals.R

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```
# Install required packages (run once)
install.packages("ggplot2")

## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
install.packages("palmerpenguins")

## Installing package into '/cloud/lib/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)

# Load libraries
library(ggplot2)
library(palmerpenguins)

# Scatter plot: Flipper length vs Body mass, colored by species
ggplot(data = penguins) +
  geom_point(mapping = aes(x = flipper_length_mm, y = body_mass_g, color = species)) +
  ggtitle("Penguins: Flipper Length vs Body Mass by Species") +
  labs(subtitle = "Colored points represent different penguin species") +
  annotate("text", x = 220, y = 3500, label = "The Gentoos are the largest!",
         color = "purple", fontface = "bold", fontsize = 4.5, angle = 25)

## Warning in annotate("text", x = 220, y = 3500, label = "The Gentoos are the
## largest!", : Ignoring unknown parameters: `fontsize`

## Warning: Removed 2 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

Penguins: Flipper Length vs Body Mass by Species

Colored points represent different penguin species



```
# Scatter plot: Flipper length vs Body mass, points shaped and colored by species
```

```
ggplot(data = penguins) +
```

```
  geom_point(mapping = aes(x = flipper_length_mm, y = body_mass_g, shape = species, color = species)) +
```

```
  ggtitle("Penguins: Flipper Length vs Body Mass (Shape & Color by Species)") +
```

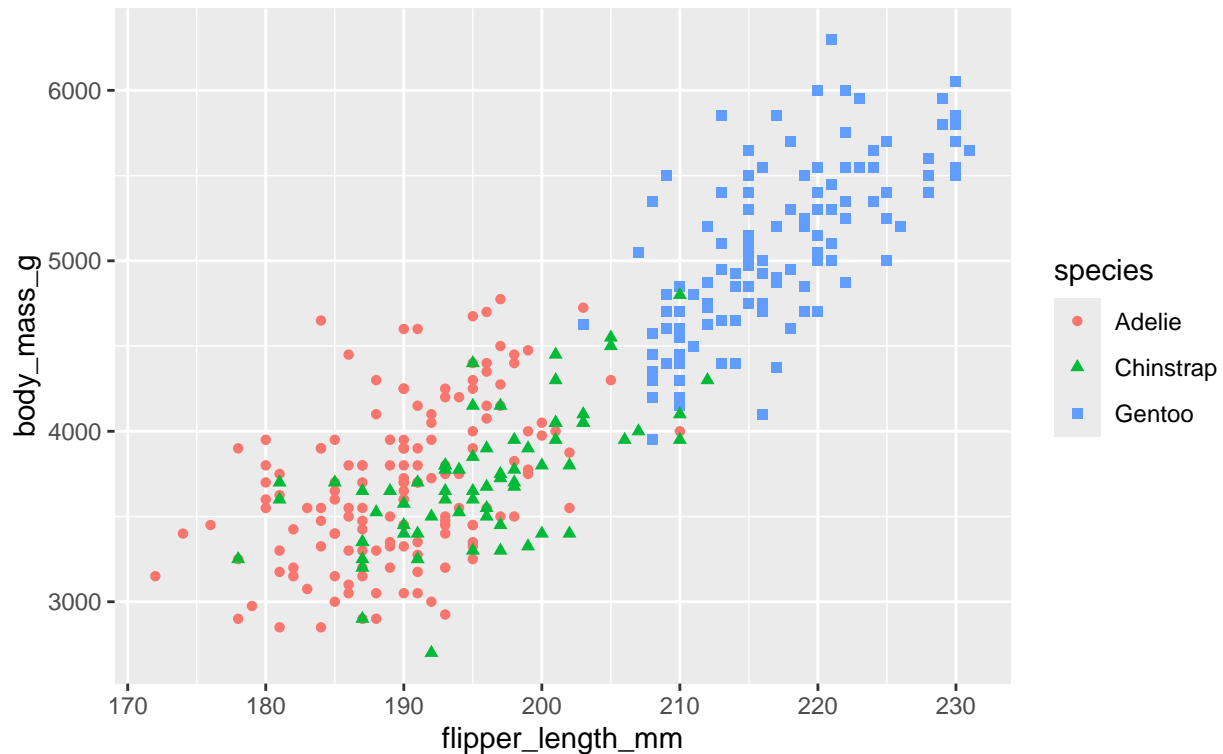
```
  labs(subtitle = "Shape and color differentiate penguin species")
```

```
## Warning: Removed 2 rows containing missing values or values outside the scale range
```

```
## (`geom_point()`).
```

Penguins: Flipper Length vs Body Mass (Shape & Color by Species)

Shape and color differentiate penguin species

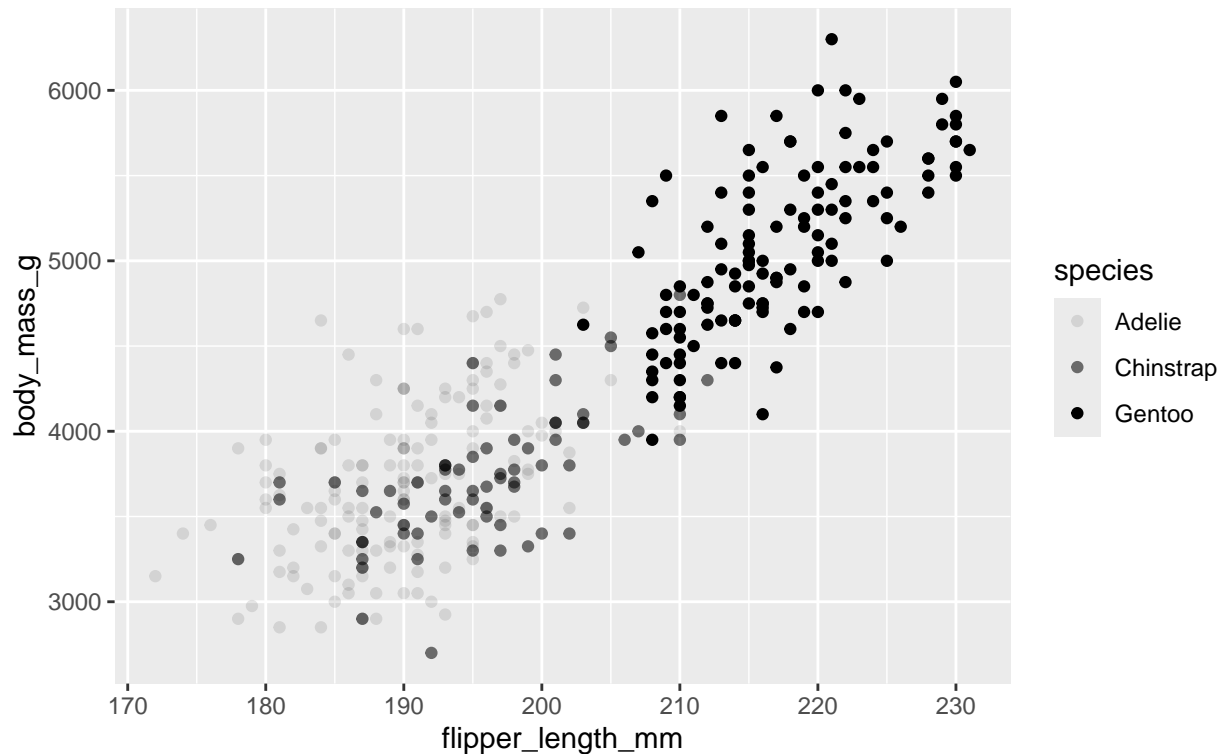


```
# Scatter plot: Flipper length vs Body mass, points with transparency based on species
ggplot(data = penguins) +
  geom_point(mapping = aes(x = flipper_length_mm, y = body_mass_g, alpha = species)) +
  ggtitle("Penguins: Flipper Length vs Body Mass with Alpha by Species") +
  labs(subtitle = "Transparency varies by species for visual distinction")
```

```
## Warning: Using alpha for a discrete variable is not advised.
## Removed 2 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

Penguins: Flipper Length vs Body Mass with Alpha by Species

Transparency varies by species for visual distinction



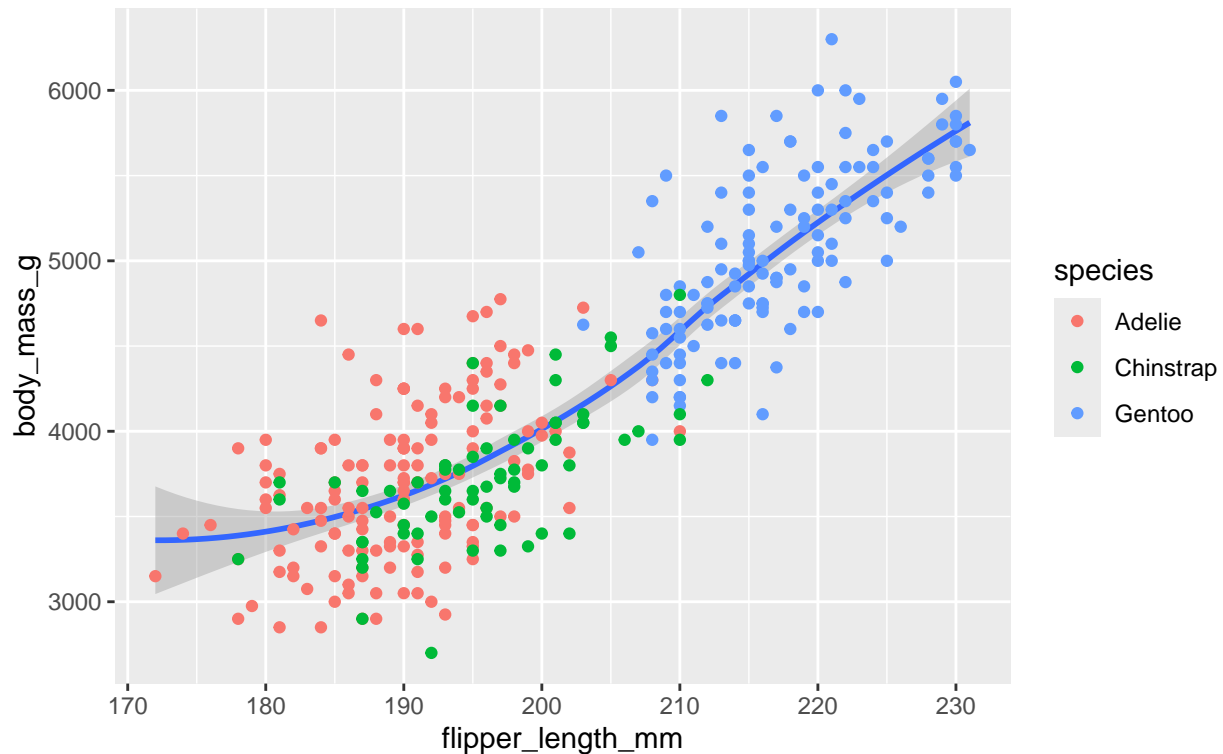
```
# Scatter plot with smooth trend line and points colored by species
ggplot(data = penguins) +
  geom_smooth(mapping = aes(x = flipper_length_mm, y = body_mass_g)) +
  geom_point(mapping = aes(x = flipper_length_mm, y = body_mass_g, color = species)) +
  ggtitle("Penguins: Body Mass vs Flipper Length with Trend Line") +
  labs(subtitle = "Smoothed trend line overlaid on scatter plot")

## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'

## Warning: Removed 2 rows containing non-finite outside the scale range (`stat_smooth()`).
## Removed 2 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

Penguins: Body Mass vs Flipper Length with Trend Line

Smoothed trend line overlaid on scatter plot

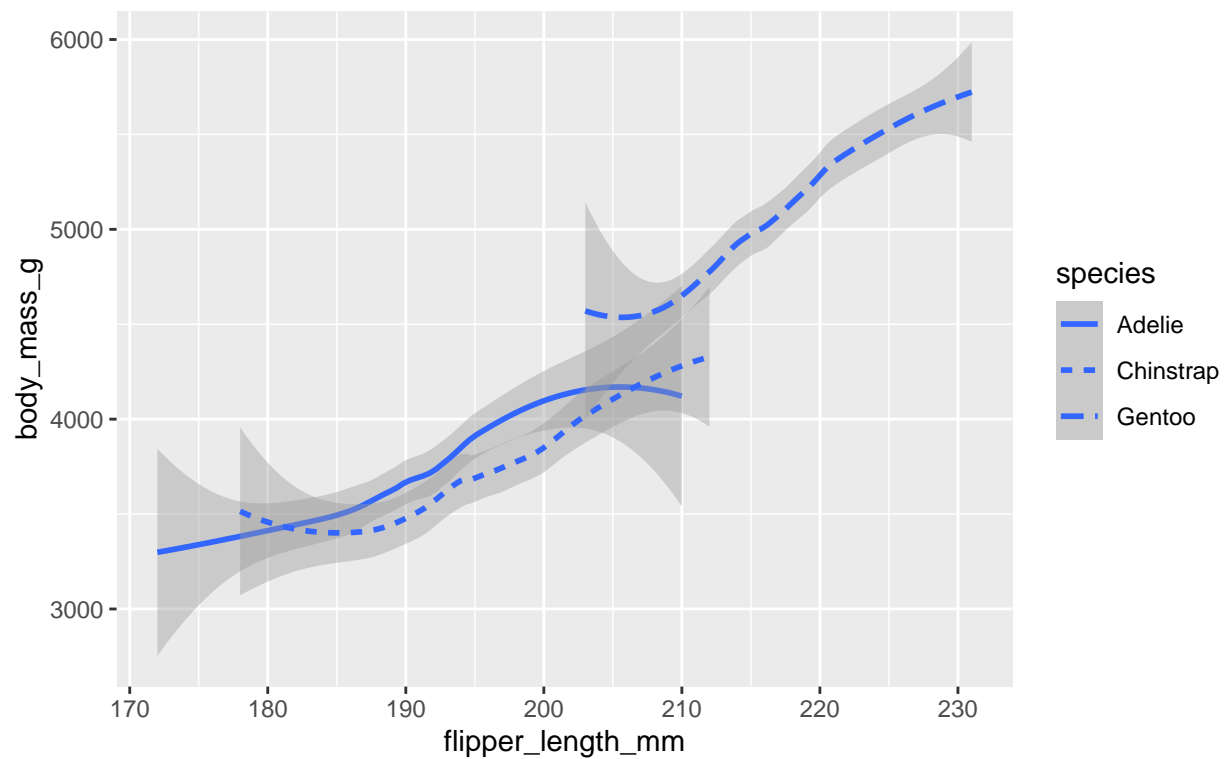


```
# Smooth lines showing trends by species with different line types  
ggplot(data = penguins) +  
  geom_smooth(mapping = aes(x = flipper_length_mm, y = body_mass_g, linetype = species)) +  
  ggtitle("Penguins: Trend Lines of Body Mass vs Flipper Length by Species") +  
  labs(subtitle = "Line type varies by species to show trends")
```

```
## `geom_smooth()` using method = 'loess' and formula = 'y ~ x'  
## Warning: Removed 2 rows containing non-finite outside the scale range  
## (`stat_smooth()`).
```

Penguins: Trend Lines of Body Mass vs Flipper Length by Species

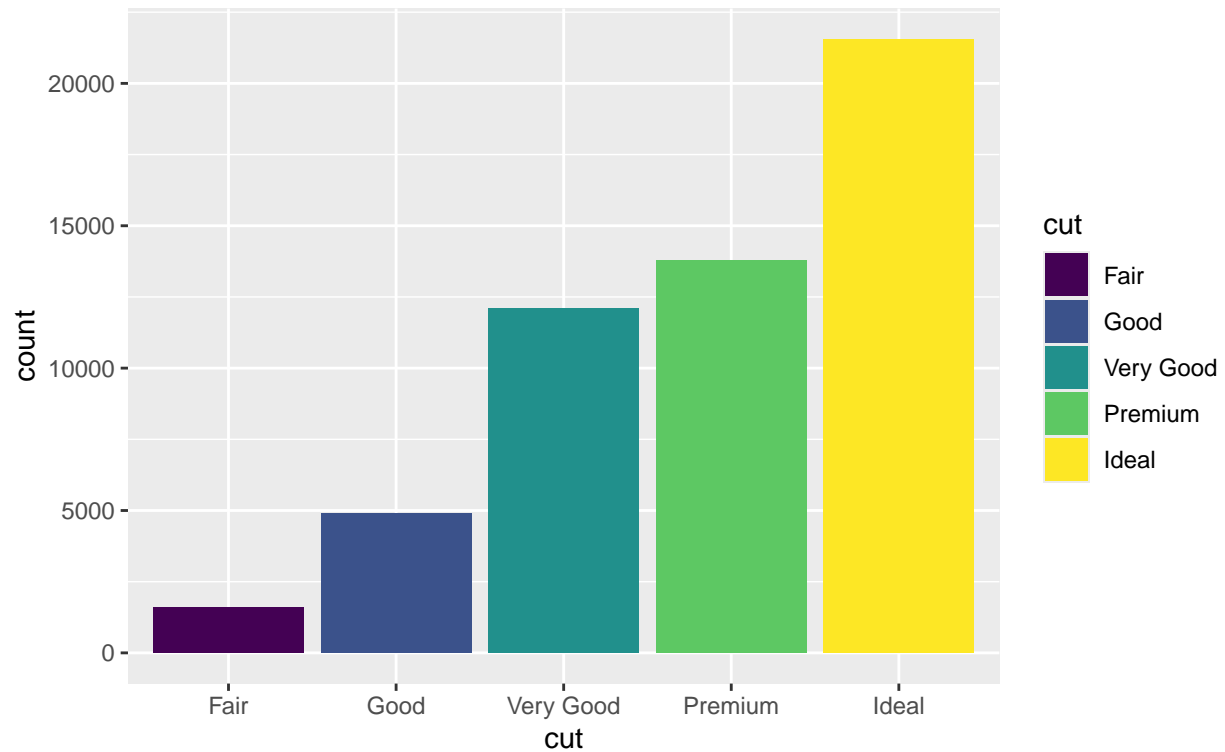
Line type varies by species to show trends



```
# Bar chart showing counts of diamonds by cut, filled by cut
ggplot(data = diamonds) +
  geom_bar(mapping = aes(x= cut, fill = cut)) +
  ggtitle("Diamonds: Count by Cut") +
  labs(subtitle = "Number of diamonds in each cut category")
```

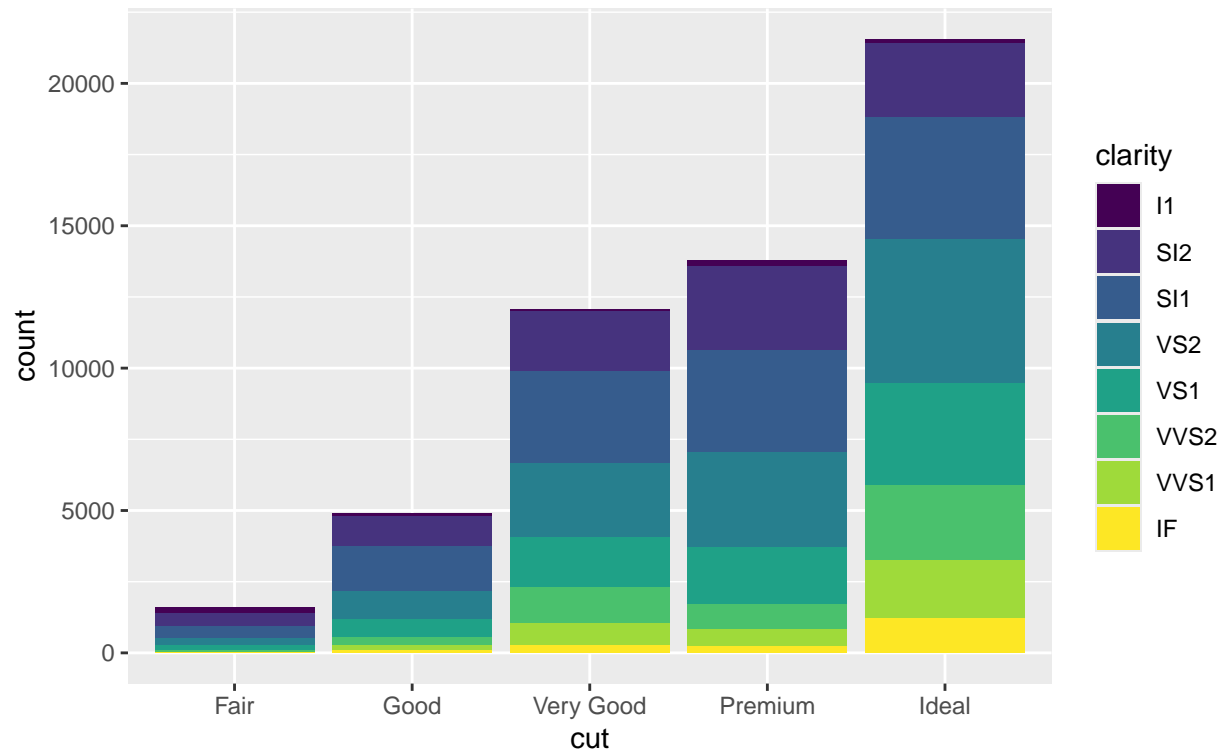
Diamonds: Count by Cut

Number of diamonds in each cut category



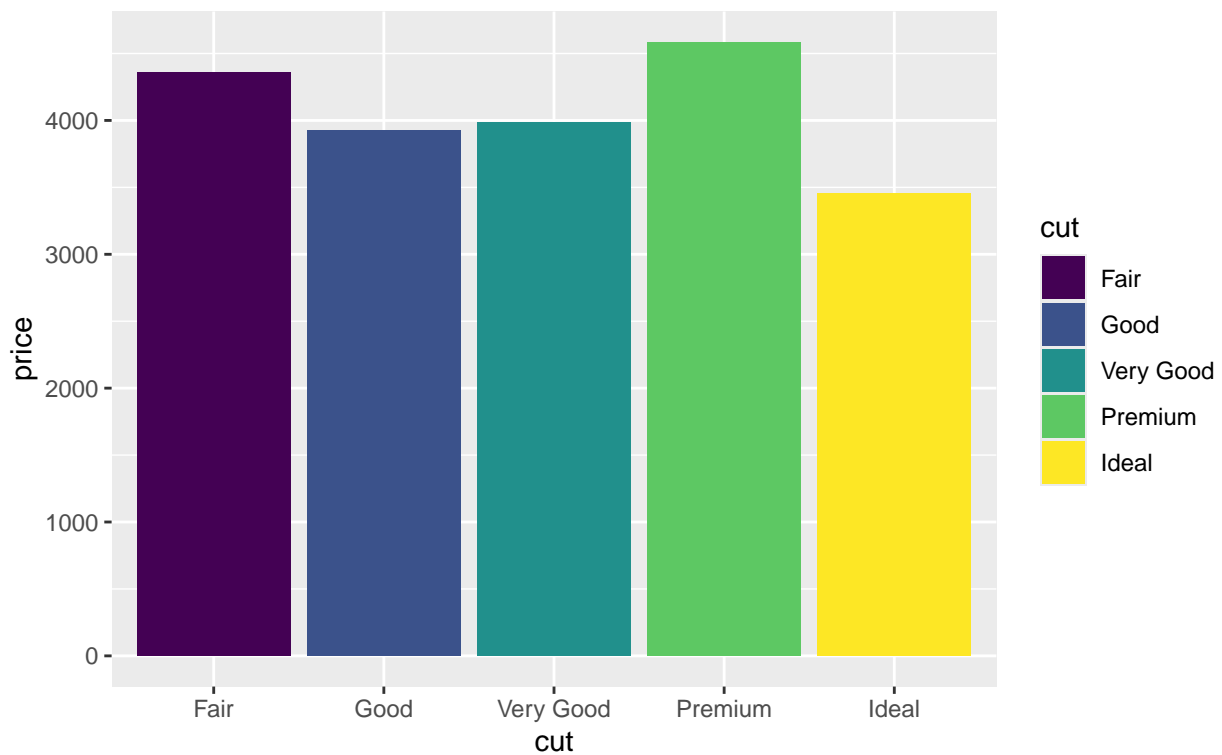
```
# Bar chart showing counts of diamonds by cut, filled by clarity
ggplot(data = diamonds) +
  geom_bar(mapping = aes(x= cut, fill = clarity)) +
  ggtitle("Diamonds: Count by Cut Filled by Clarity") +
  labs(subtitle = "Cut categories filled by clarity to show distribution")
```

Diamonds: Count by Cut Filled by Clarity
Cut categories filled by clarity to show distribution



```
# Bar chart showing average price by cut, bars filled by cut
ggplot(data = diamonds, aes(x = cut, y = price, fill = cut)) +
  stat_summary(fun = mean, geom = "bar") +
  ggtitle("Diamonds: Average Price by Cut") +
  labs(subtitle = "Mean price of diamonds for each cut category")
```


Diamonds: Average Price by Cut
Mean price of diamonds for each cut category



```
# Scatter plot faceted by species, colored by species
ggplot(data = penguins) +
  geom_point(mapping = aes(x = flipper_length_mm, y = body_mass_g, color = species)) +
  facet_wrap(~species) +
  ggtitle("Penguins: Flipper Length vs Body Mass Faceted by Species") +
  labs(subtitle = "Separate panels for each species")
```

```
## Warning: Removed 2 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

Penguins: Flipper Length vs Body Mass Faceted by Species

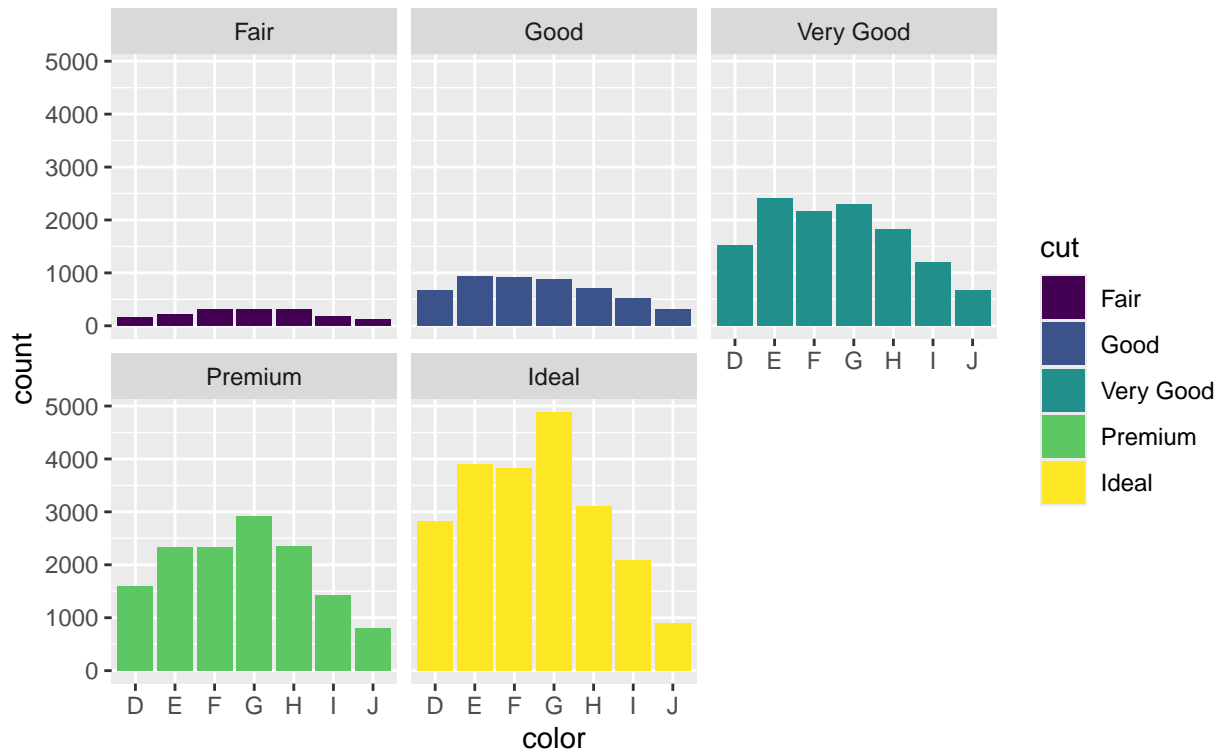
Separate panels for each species



```
# Bar chart of diamond color counts, filled by cut, faceted by cut
ggplot(data = diamonds) +
  geom_bar(mapping = aes(x= color, fill = cut)) +
  facet_wrap(~cut) +
  ggtitle("Diamonds: Color Distribution Faceted by Cut") +
  labs(subtitle = "Color frequency within each cut category")
```

Diamonds: Color Distribution Faceted by Cut

Color frequency within each cut category



```
# Scatter plot faceted by sex and species, colored by species
ggplot(data = penguins) +
  geom_point(mapping = aes(x = flipper_length_mm, y = body_mass_g, color = species)) +
  facet_grid(sex~species) +
  ggtitle("Penguins: Flipper Length vs Body Mass Faceted by Sex and Species") +
  labs(subtitle = "Panels arranged by sex (rows) and species (columns)")
```

```
## Warning: Removed 2 rows containing missing values or values outside the scale range
## (`geom_point()`).
```

Penguins: Flipper Length vs Body Mass Faceted by Sex and Species

Panels arranged by sex (rows) and species (columns)

