Agenda

- univariate bar plot
- bivariate bar plot
  - grouped
  - stacked
  - proportional
- mosaic plot
- pie chart
- donut chart

Resources

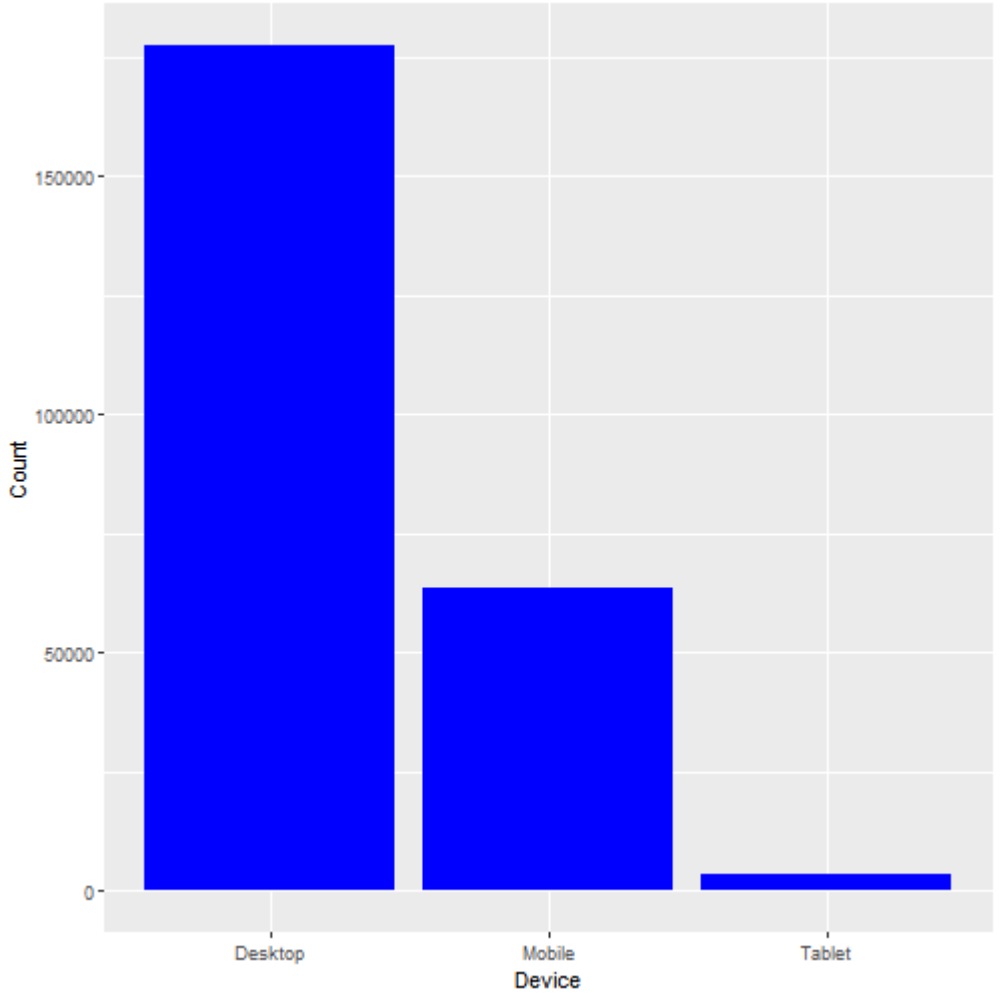
- Slides
- Data & Scripts
- RStudio Cloud
- Online Course
- Blog Post

Import Data

```
data <- readRDS('data/analytics.rds')
data
```

```
## # A tibble: 244,398 x 19
##    device  os    browser user_type  channel  gender frequency recency page
##    <fct>   <fct> <fct>   <fct>      <fct>    <fct>      <dbl>   <dbl>
##  1 Desktop Wind~ Chrome  New Visit~ Organic~ female         1       0
##  2 Mobile  iOS   Safari  Returning~ Organic~ <NA>           3       1
##  3 Desktop Chro~ Chrome  New Visit~ Direct   <NA>           1       0
##  4 Desktop Maci~ Chrome  Returning~ Organic~ <NA>           2       0
##  5 Desktop Maci~ Chrome  Returning~ Referral <NA>           5       8
##  6 Mobile  Andr~ Chrome  New Visit~ Organic~ <NA>           1       0
##  7 Desktop Wind~ Chrome  New Visit~ Organic~ <NA>           1       0
##  8 Desktop Maci~ Chrome  Returning~ Referral <NA>           8      24
##  9 Desktop Wind~ Chrome  New Visit~ Organic~ female         1       0
## 10 Desktop Chro~ Chrome  New Visit~ Direct   <NA>           1       0
## # ... with 244,388 more rows, and 10 more variables: hour_of_day <chr>,
## #   age <dbl>, duration <dbl>, landing_page <fct>, exit_page <fct>,
## #   country <fct>, quantity <dbl>, revenue <dbl>, purchase_flag <lgl>,
## #   user_rating <dbl>
```

Bar Plot

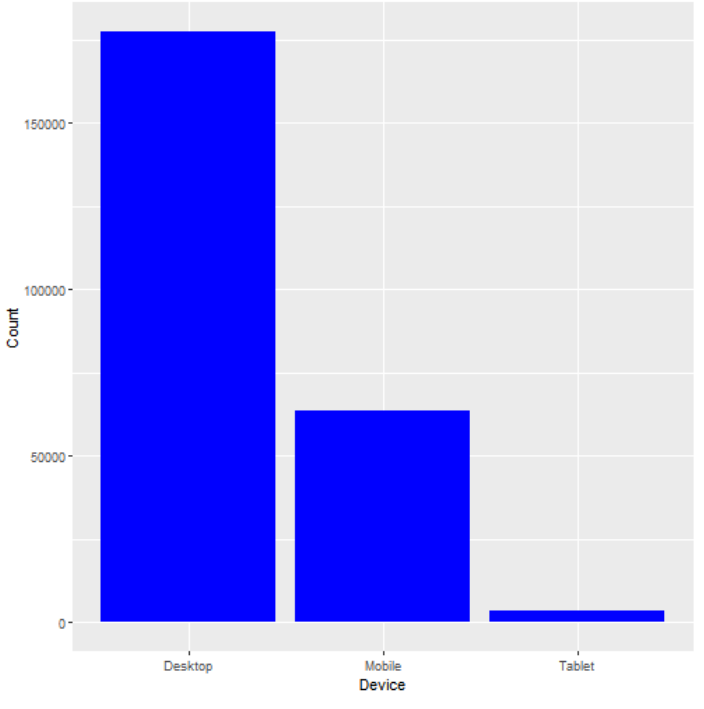


Bar Plot

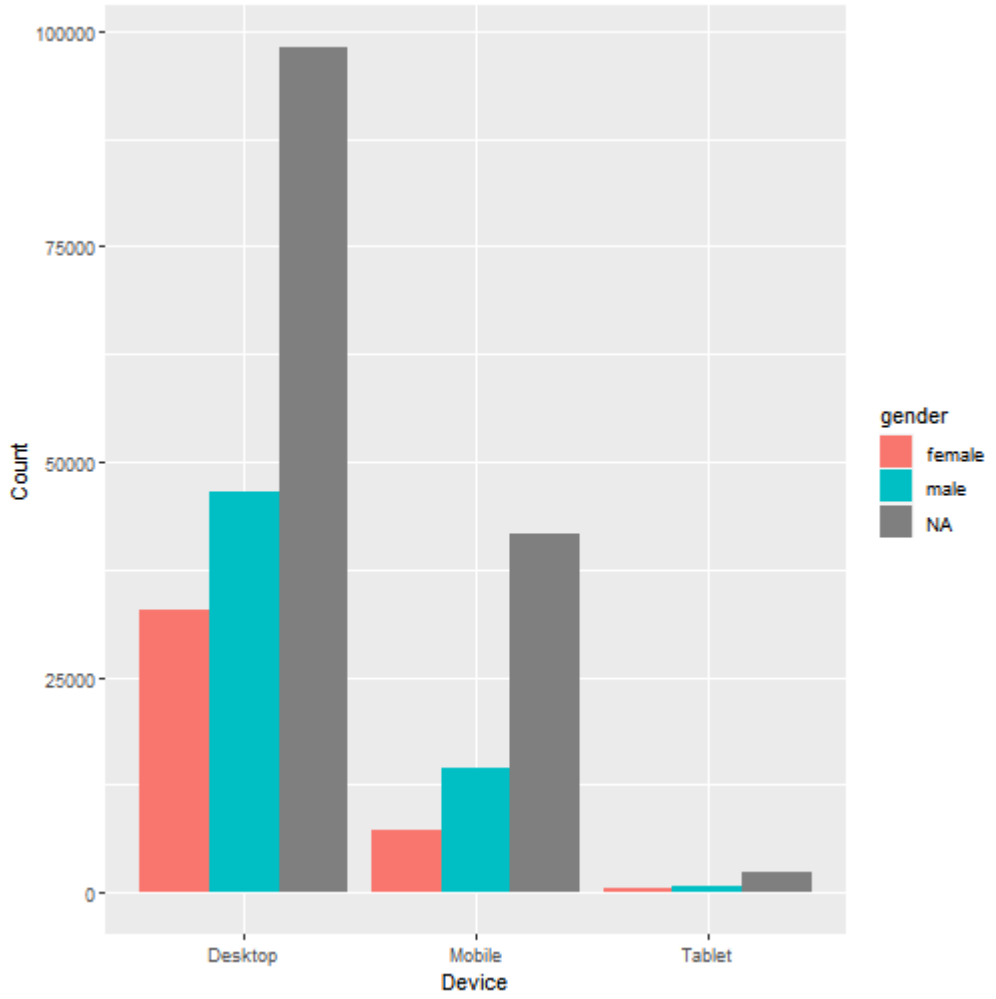
Code

```
ggplot(data) +
  geom_bar(aes(x = device),
           fill  = "blue") +
  xlab("Device") +
  ylab("Count")
```

Plot



Grouped Bar Plot

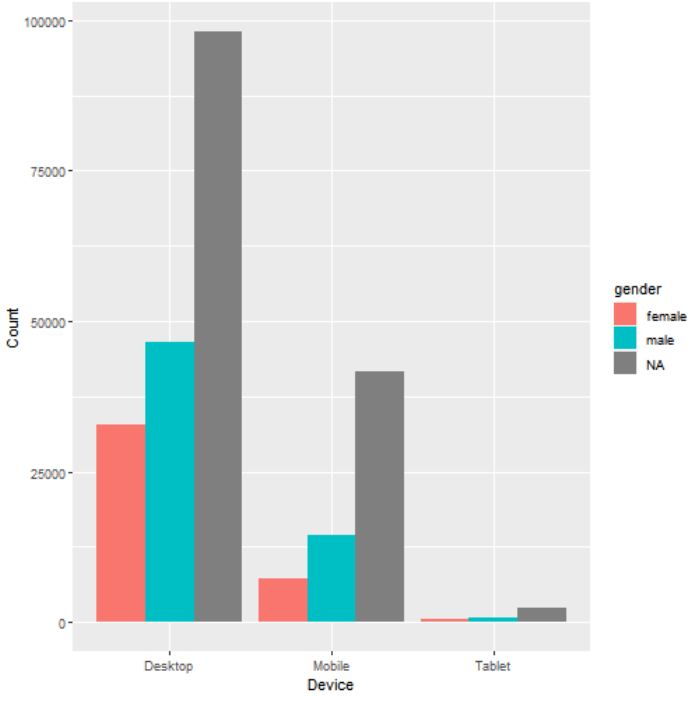


Grouped Bar Plot

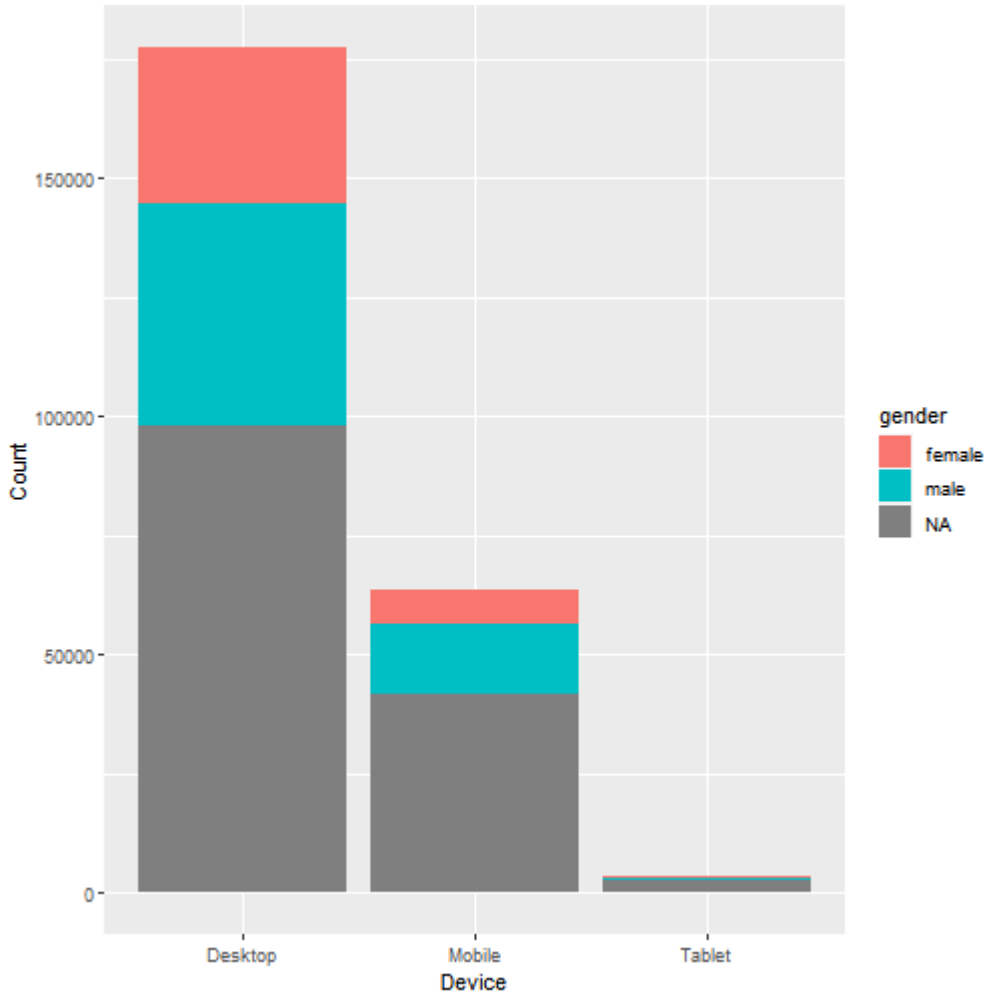
Code

```
ggplot(data) +
  geom_bar(aes(x    = device,
               fill = gender),
           position = "dodge") +
  xlab("Device") +
  ylab("Count")
```

Plot



Stacked Bar Plot

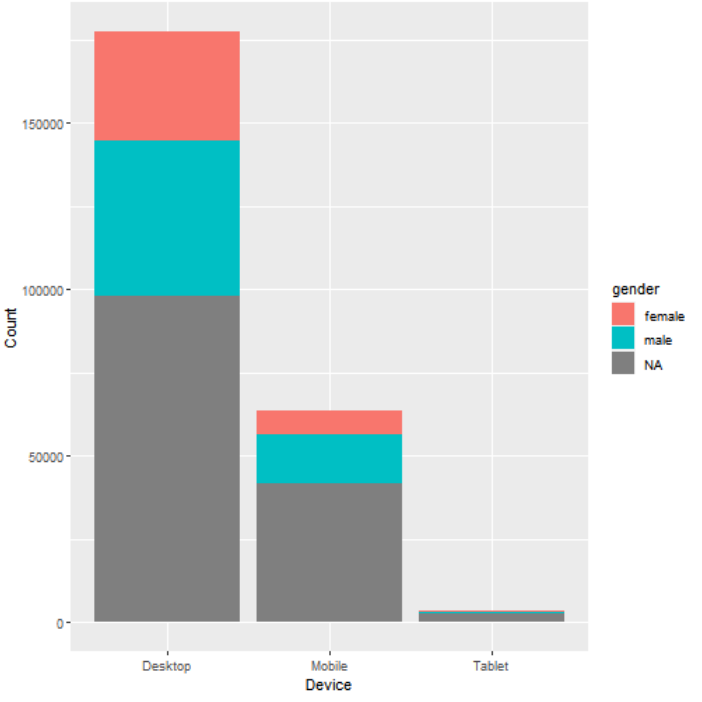


Stacked Bar Plot

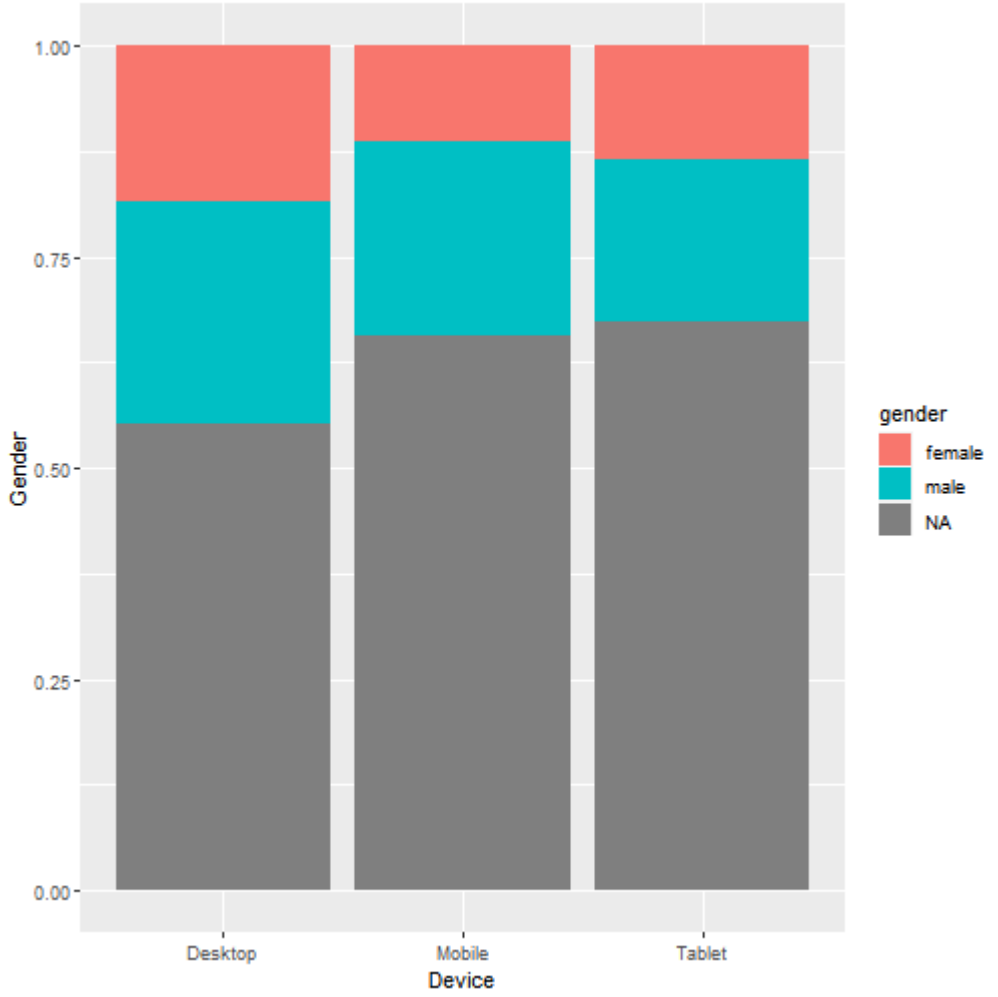
Code

```
ggplot(data) +
  geom_bar(aes(x    = device,
               fill = gender)) +
  xlab("Device") +
  ylab("Count")
```

Plot



Proportional Bar Plot



Proportional Bar Plot

```
pdata <-
  data %>%
  select(device, gender) %>%
  table() %>%
  tibble::as_tibble()
```

Proportional Bar Plot

```
pdata
```

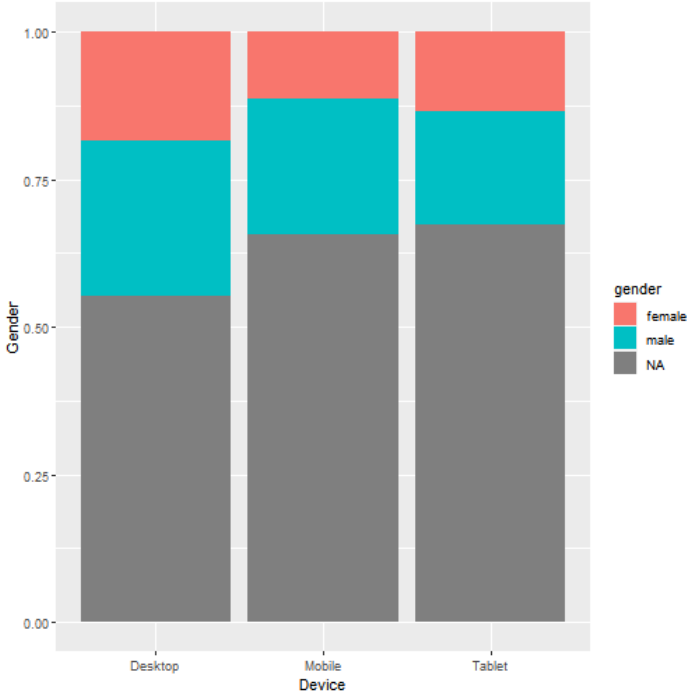
```
## # A tibble: 9 x 3
##   device  gender     n
##   <chr>   <chr>  <int>
## 1 Desktop female 32803
## 2 Mobile  female  7268
## 3 Tablet  female   494
## 4 Desktop male   46418
## 5 Mobile  male   14503
## 6 Tablet  male     696
## 7 Desktop <NA>   98061
## 8 Mobile  <NA>   41711
## 9 Tablet  <NA>    2444
```

Proportional Bar Plot

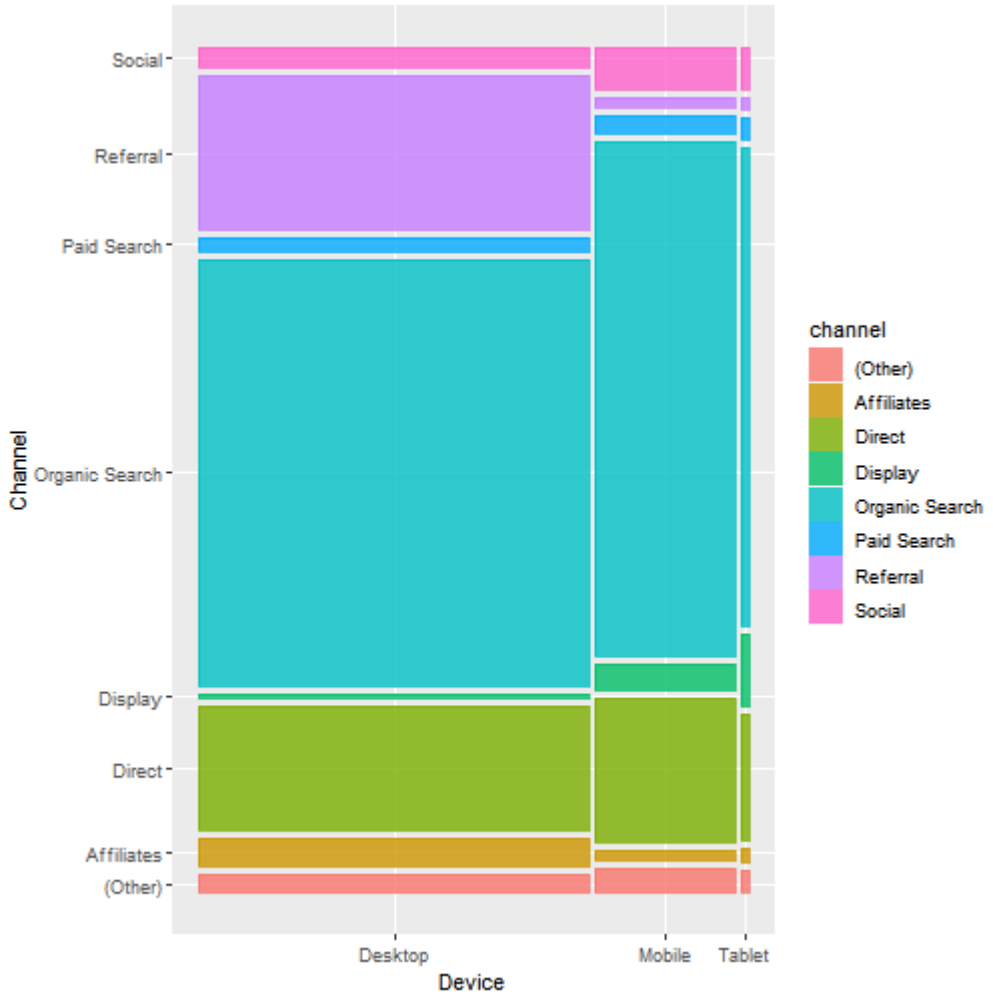
Code

```
pdata %>%
  ggplot(aes(x = device,
             y = n,
             fill = gender)) +
  geom_bar(stat = "identity",
           position = "fill") +
  xlab("Device") +
  ylab("Gender")
```

Plot



Mosaic Plot

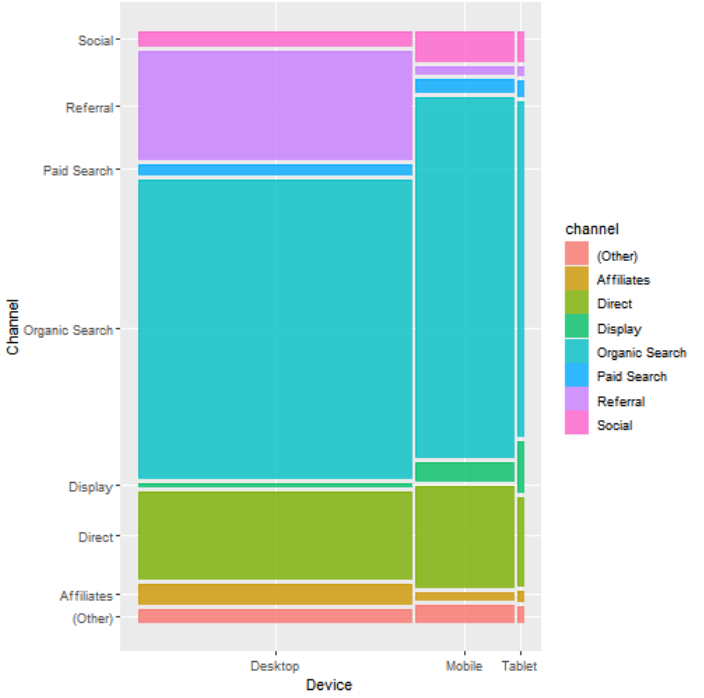

Social
Referral
Paid Search
Organic Search
Display
Direct
Affiliates
(Other)
Channel
Desktop
Mobile
Tablet
Device
channel
(Other)
Affiliates
Direct
Display
Organic Search
Paid Search
Referral
Social

Mosaic Plot

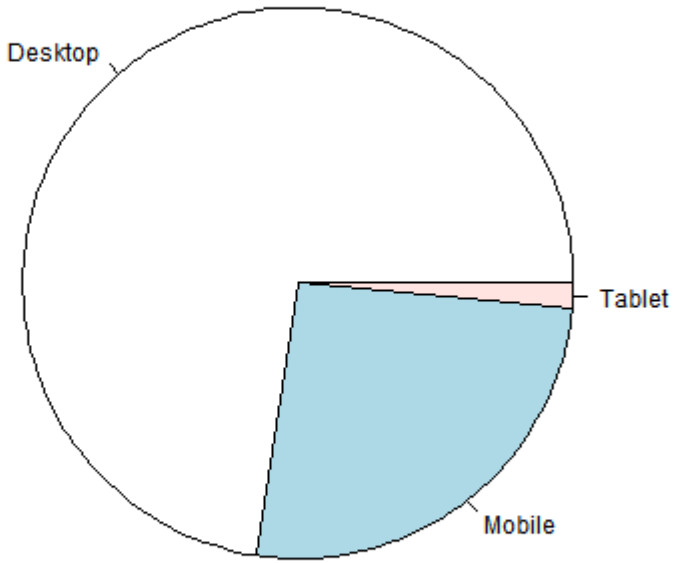
Code

```
ggplot(data = data) +
  geom_mosaic(
    aes(
      x    = product(channel, de
      fill = channel
    )
  ) +
  xlab("Device") +
  ylab("Channel")
```

Plot



Pie Chart

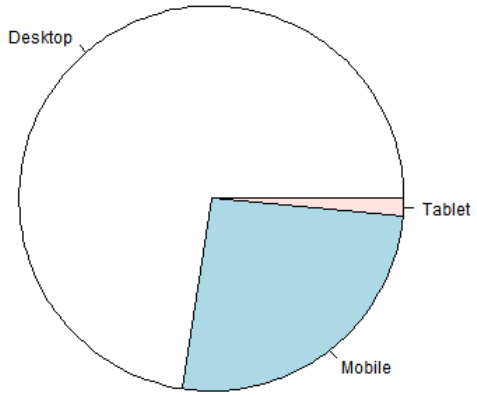


Pie Chart

Code

```
data %>%
  pull(device) %>%
  table() %>%
  pie()
```

Plot

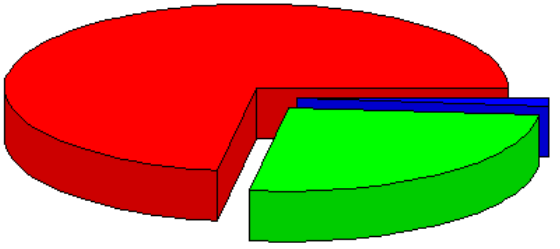


3D Pie Chart

Code

```
data %>%
  pull(device) %>%
  table() %>%
  pie3D(explode = 0.1)
```

Plot



ggplot2 Pie Chart

```
pie_data <-
  data %>%
  pull(device) %>%
  fct_count() %>%
  rename(device = f,
         count = n)
```

ggplot2 Pie Chart

```
pie_data
```

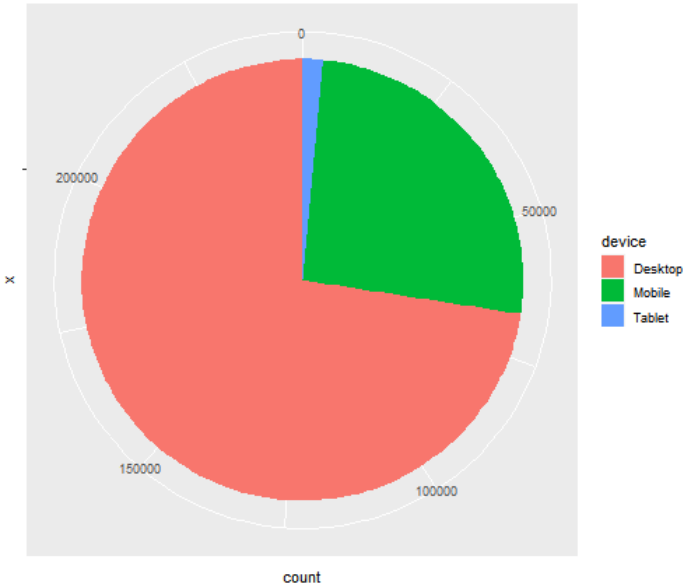
```
## # A tibble: 3 x 2
##   device   count
##   <fct>    <int>
## 1 Desktop 177282
## 2 Mobile   63482
## 3 Tablet    3634
```

ggplot2 Pie Chart

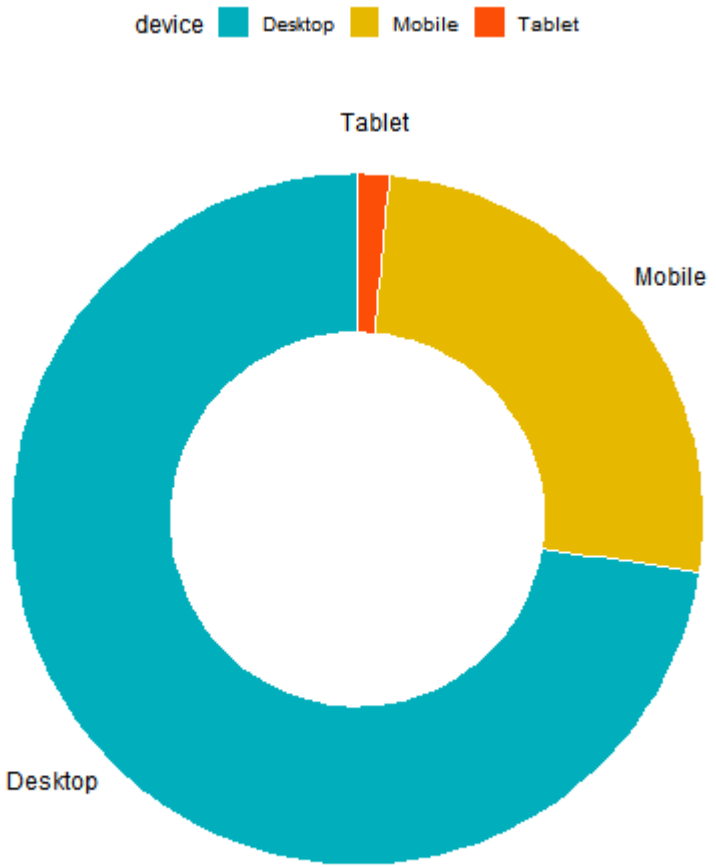
Code

```
pie_data %>%
  ggplot() +
  geom_bar(
    aes(x = "",
        y = count,
        fill = device),
    width = 1,
    stat = "identity") +
  coord_polar("y",
              start = 0)
```

Plot



Donut Chart

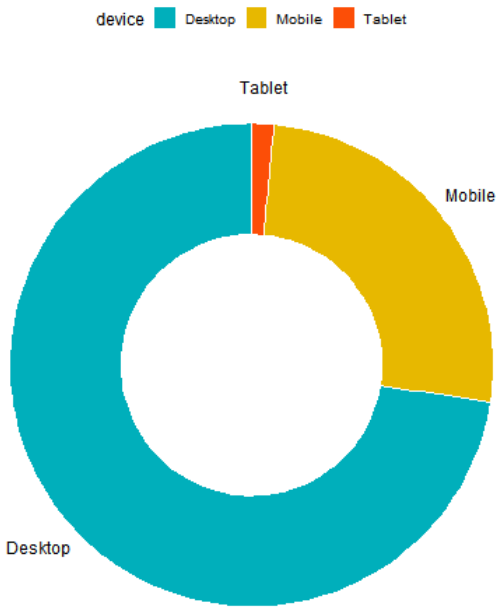


Donut Chart

Code

```
pie_data %>%
  ggdonutchart("count",
               label = "device",
               fill = "device",
               color = "white",
               palette = c("#00A
```

Plot



References

- https://forcats.tidyverse.org/
- https://r4ds.had.co.nz/factors.html
- https://recipes.tidymodels.org/reference/discretize.html
- https://ggplot2.tidyverse.org/
- https://haleyjeppson.github.io/ggmosaic/
- https://rpkgs.datanovia.com/ggpubr/reference/ggdonutchart.html

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