

# Exploring the 2021 Canadian Elections

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#### Preamble ####
# Purpose: Read in data from the 2021 Canadian Election and make a graph of
# the number of seats each party won.
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# Prerequisites: Know where to get Canadian elections data.

#### Workspace setup ####
# install.packages("tidyverse")
# install.packages("janitor")

library(tidyverse)
library(janitor)

# Simulate Data
simulated_data <-
  tibble(
    # Use 1 through to 338 to represent each division
    "Riding" = 1:338,
    # Randomly pick an option, with replacement, 338 times
    "Party" = sample(
      x = c("Liberal", "Conservative", "Bloc Québécois", "New Democratic",
            "Green", "Other"),
      size = 338,
      replace = TRUE
    )
  )

simulated_data
```

```
# A tibble: 338 x 2
  Riding Party
  <int> <chr>
1      1 Conservative
2      2 Liberal
3      3 Other
4      4 Green
5      5 New Democratic
6      6 Conservative
7      7 Green
8      8 Liberal
9      9 Other
10     10 Bloc Québécois
# i 328 more rows
```

```
# Get Actual Data
raw_elections_data <-
  read_csv(
    file = "table_tableau11.csv",
    show_col_types = FALSE
  )
```

```
# raw_elections_data
```

```
# Clean Names
cleaned_elections_data <-
  clean_names(raw_elections_data)
```

```
# Select the two columns
cleaned_elections_data <-
  cleaned_elections_data |>
  select(
    electoral_district_name_nom_de_circonscription,
    elected_candidate_candidat_elu
  )
```

```
# head(cleaned_elections_data)
```

```
# Rename Columns
cleaned_elections_data <-
```

```
cleaned_elections_data |>
  rename(
    electoral_district_name = electoral_district_name_nom_de_circonscription,
    elected_candidate = elected_candidate_candidat_elu
  )
```

```
head(cleaned_elections_data)
```

```
# A tibble: 6 x 2
  electoral_district_name      elected_candidate
  <chr>                      <chr>
1 Avalon                    McDonald, Ken Liberal/Libéral
2 Bonavista--Burin--Trinity Rogers, Churence Liberal/Libéral
3 Coast of Bays--Central--Notre Dame Small, Clifford Conservative/Conservateur
4 Labrador                  Jones, Yvonne Liberal/Libéral
5 Long Range Mountains      Hutchings, Gudie Liberal/Libéral
6 St. John's East/St. John's-Est Thompson, Joanne Liberal/Libéral
```

```
# Separate Name and Party
cleaned_elections_data <-
  cleaned_elections_data |>
  separate(
    col = elected_candidate,
    into = c("Other", "party"),
    sep = "/"
  ) |>
  select(-Other)
```

```
cleaned_elections_data
```

```
# A tibble: 338 x 2
  electoral_district_name      party
  <chr>                      <chr>
1 Avalon                    Libéral
2 Bonavista--Burin--Trinity Libéral
3 Coast of Bays--Central--Notre Dame Conservateur
4 Labrador                  Libéral
5 Long Range Mountains      Libéral
6 St. John's East/St. John's-Est Libéral
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7 St. John's South--Mount Pearl/St. John's-Sud--Mount Pearl Libéral
8 Cardigan Libéral
9 Charlottetown Libéral
10 Egmont Libéral
# i 328 more rows

```

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# List of Unique Parties
cleaned_elections_data$party |>
  unique()

```

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[1] "Libéral" "Conservateur"
[3] "Bloc Québécois" "NPD-Nouveau Parti démocratique"
[5] "Parti Vert"

```

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# Recode Party Names from French to English
cleaned_elections_data <-
  cleaned_elections_data |>
  mutate(
    party =
      case_match(
        party,
        "Libéral" ~ "Liberal",
        "Conservateur" ~ "Conservative",
        "Bloc Québécois" ~ "Bloc Québécois",
        "NPD-Nouveau Parti démocratique" ~ "New Democratic",
        "Parti Vert" ~ "Green",
      )
  )

```

```

head(cleaned_elections_data)

```

```

# A tibble: 6 x 2
  electoral_district_name party
  <chr> <chr>
1 Avalon Liberal
2 Bonavista--Burin--Trinity Liberal
3 Coast of Bays--Central--Notre Dame Conservative
4 Labrador Liberal
5 Long Range Mountains Liberal
6 St. John's East/St. John's-Est Liberal

```

```
# Make a new .csv file containing the cleaned data
write_csv(
  x = cleaned_elections_data,
  file = "cleaned_elections_data.csv"
)

# Read the cleaned data
cleaned_elections_data <-
  read_csv(
    file = "cleaned_elections_data.csv",
    show_col_types = FALSE
  )

# Make a data table mapping party to number of seats
cleaned_elections_data |>
  count(party)
```

```
# A tibble: 5 x 2
  party      n
  <chr>    <int>
1 Bloc Québécois    32
2 Conservative    119
3 Green             2
4 Liberal          160
5 New Democratic    25
```

```
# Plot the data table as a bar graph (played around with the themes here)
cleaned_elections_data |>
  ggplot(aes(x = party)) +
  geom_bar() +
  theme_classic() +
  labs(x = "Party", y = "Number of seats")
```

