R Notebook - NZ Birds

Set up working space

```
rm(list = ls())
```

```
library(ggplot2)
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.2.1 --
```

```
## v tibble  2.1.3     v purrr   0.3.2
## v tidyr   0.8.3     v dplyr   0.8.1
## v readr   1.3.1     v stringr 1.4.0
## v tibble  2.1.3     v forcats 0.4.0
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
nz_bird <- readr::read_csv("https://raw.githubusercontent.com/rfordatascience/tidytuesday/master/data/2
```

```
## Parsed with column specification:
## cols(
##   date = col_date(format = ""),
##   hour = col_double(),
##   vote_rank = col_character(),
##   bird_breed = col_character()
## )
```

```
head(nz_bird); dim(nz_bird)
```

```
## # A tibble: 6 x 4
##   date        hour vote_rank bird_breed
##   <date>     <dbl> <chr>     <chr>
## 1 2019-10-28     8 vote_1    Gibson's Albatross
## 2 2019-10-28     8 vote_2    Tūī
## 3 2019-10-28     8 vote_3    Kākā
## 4 2019-10-28     8 vote_4    Kākāpō
## 5 2019-10-28     8 vote_5    Little Spotted Kiwi
## 6 2019-10-28     8 vote_1    Spotted Shag
```

```
## [1] 217300      4
```

vote rank: 1 is highest, 5 is lowest

Data cleaning

```
unique(nz_bird$bird_breed)
```

```
##  [1] "Gibson's Albatross"             "Tūī"
##  [3] "Kākā"                           "Kākāpō"
##  [5] "Little Spotted Kiwi"            "Spotted Shag"
##  [7] "Fantail"                        "Weka"
##  [9] NA                               "Great Spotted Kiwi"
## [11] "Kea"                            "Kererū"
```

```
## [13] "Blue Duck"                          "New Zealand Falcon"
## [15] "South Island Kōkako"                "Morepork"
## [17] "Australasian Gannet"                "Little Penguin"
## [19] "Rockhopper Penguin"                 "Bittern"
## [21] "Black Robin"                        "North Island Brown Kiwi"
## [23] "Stitchbird"                         "Banded Dotterel"
## [25] "Hutton's Shearwater"                "Antipodean Albatross"
## [27] "Whenua Hou Diving Petrel"           "Southern Brown Kiwi"
## [29] "Wrybill"                            "Tomtit"
## [31] "Pūkeko"                             "Black Petrel"
## [33] "Chatham Island Oystercatcher"       "New Zealand Dotterel"
## [35] "Yellow-eyed penguin"                "Bellbird"
## [37] "Chatham Island Mollymawk"           "Welcome Swallow"
## [39] "Harrier"                            "Barn Owl"
## [41] "Fairy Tern"                         "Black Stilt"
## [43] "Shore Plover"                       "Shining Cuckoo"
## [45] "Saddleback"                         "Orange-fronted Parakeet"
## [47] "Silvereye"                          "Takahē"
## [49] "Kōkako"                             "Royal Spoonbill"
## [51] "Black-fronted Tern"                 "Fiordland Crested Penguin"
## [53] "White Heron"                        "Rifleman"
## [55] "Arctic Skua"                        "Kingfisher"
## [57] "Grey Warbler"                       "Bar-tailed Godwit"
## [59] "Brown Teal"                         "Rock Wren"
## [61] "Fernbird"                           "Southern Royal Albatross"
## [63] "New Zealand Robin"                  "Mōhua"
## [65] "Black-billed Gull"                  "New Zealand Dabchick"
## [67] "The Otago Shag"                     "Northern Royal Albatross"
## [69] "Spotless Crake"                     "Scaup"
## [71] "Whitehead"                          "White-faced Heron"
## [73] "Buller's Mollymawk"                 "Australasian Crested Grebe"
## [75] "South Polar Skua"                   "Campbell Black-Browed Albatross"
## [77] "Grey Duck"                          "South Island Pied Oystercatcher"
## [79] "Light-mantled Sooty Albatross"      "New Zealand King Shag"
## [81] "Salvin's Mollymawk"                 "Westland Petrel"
## [83] "Variable Oystercatcher"             "Black shag"
## [85] "Pied Shag"                          "Little shag"
```

```r
# remove NAs
nz<-nz_bird[complete.cases(nz_bird),]

#split the vote rank
nz<-data.frame(nz %>% separate(vote_rank,c('vote','rank'),sep='_'))

# turn date + hour into a postx object, I even specified the time zone right!
nz$date_time<-as.POSIXct(strptime(paste(nz$date, nz$hour), format="%Y-%m-%d %H", tz="NZ"))

# turn rank into numeric value
nz$rank<-as.numeric(nz$rank)

head(nz)
```

```
##         date hour vote rank          bird_breed           date_time
## 1 2019-10-28    8 vote    1  Gibson's Albatross 2019-10-28 08:00:00
## 2 2019-10-28    8 vote    2                Tūī 2019-10-28 08:00:00
```

```
## 3 2019-10-28    8 vote    3               Kākā 2019-10-28 08:00:00
## 4 2019-10-28    8 vote    4             Kākāpō 2019-10-28 08:00:00
## 5 2019-10-28    8 vote    5 Little Spotted Kiwi 2019-10-28 08:00:00
## 6 2019-10-28    8 vote    1        Spotted Shag 2019-10-28 08:00:00
```

```
#get means, se, and sample size
nz.means<-nz %>% group_by(bird_breed) %>% summarize(m=mean(rank), se=sd(rank)/sqrt(length(rank)), n=leng
nz.means$bird_breed<-as.factor(nz.means$bird_breed)
nz.means$bird_breed<-fct_reorder(nz.means$bird_breed, nz.means$m, .desc = T) #reorder factor based on m
top_ten<-nz.means[order(nz.means$m,decreasing = F),] #order data according to aveargе value
top_ten<-top_ten[1:10,] # select top ten
ggplot(top_ten, aes(x=m, y=bird_breed, label=paste('n = ',n))) + geom_point(size=3) +
  geom_errorbarh(aes(xmin=m-se, xmax=m+se),height=0.5) +
  theme_classic() +  ylab('Type of NZ bird') + xlab('Average voter rank  ± s.e.') +
  geom_text(mapping = aes(x=m+se+0.1)) + labs(title="NZ's favorite bird is the yellow-eyed penguine", su
```

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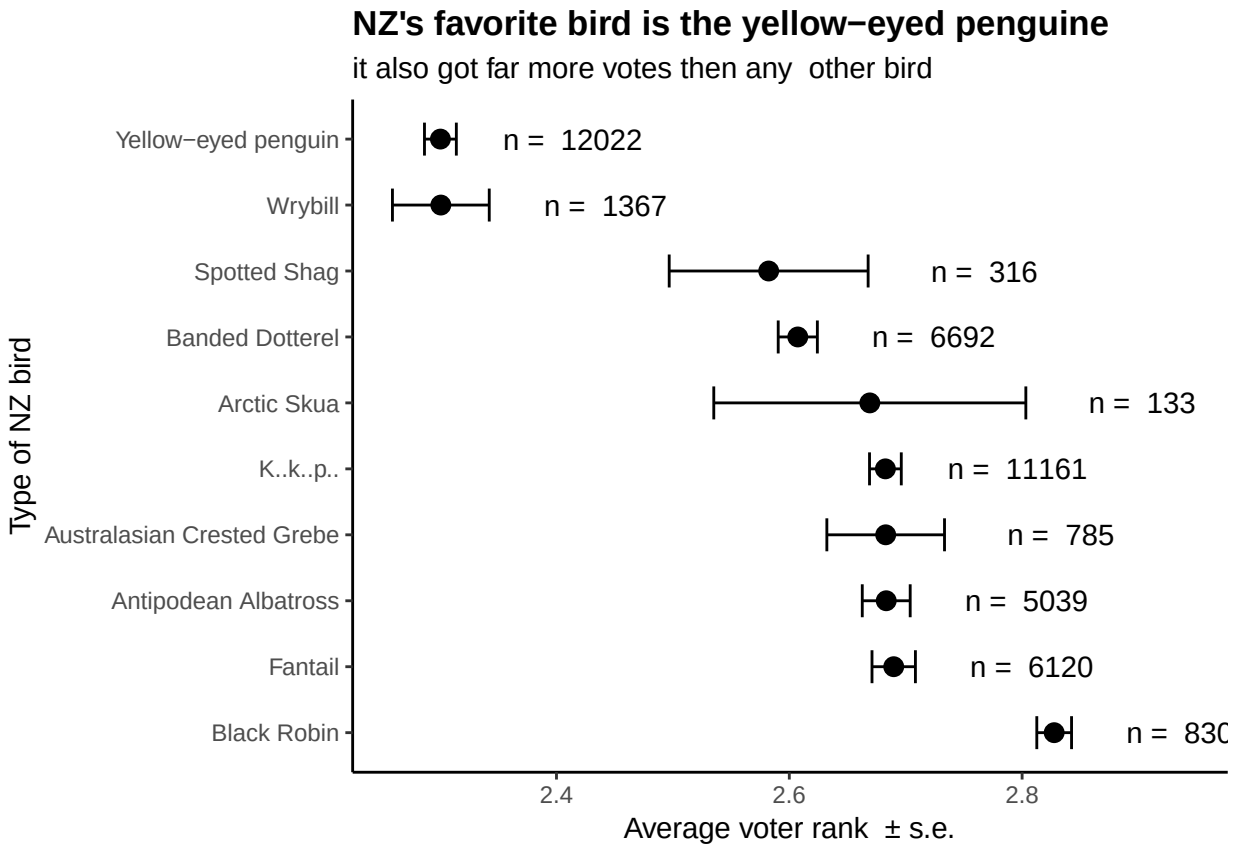


```
ggsave('nz_birds.jpeg',width=6,height=5)
```