Project2

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R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
twentyfifteen <- read.csv('~/Desktop/2015.csv')
twentysixteen <- read.csv('~/Desktop/2016.csv')
twentyseventeen <- read.csv('~/Desktop/2017.csv')
twentyeighteen <- read.csv('~/Desktop/2018.csv')
twentynineteen <- read.csv('~/Desktop/2019.csv')

length(twentyfifteen)
```

```
## [1] 12
```

```
length(twentysixteen)
```

```
## [1] 13
```

```
length(twentyseventeen)
```

```
## [1] 12
```

```
length(twentyeighteen)
```

```
## [1] 9
```

```
length(twentynineteen)
```

```
## [1] 9
```

```
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 3.6.2
```

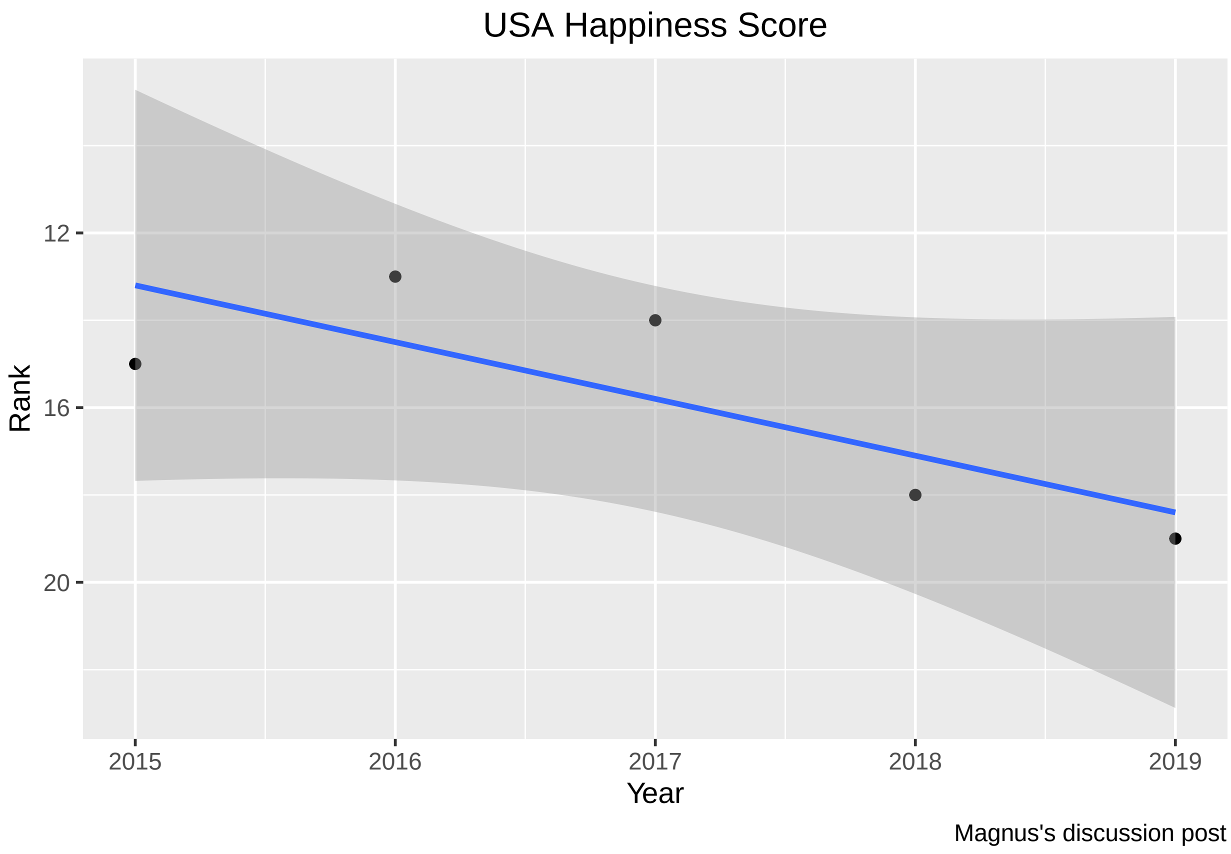
```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```r
# these data frames have different lengths! Unable to rbind right now. Let's just select 3 columns

twentyfifteen2 <- twentyfifteen %>%
  select(Country, Happiness.Rank, Happiness.Score)

twentysixteen2 <- twentysixteen %>%
  select(Country, Happiness.Rank, Happiness.Score)

twentyseventeen2 <- twentyseventeen %>%
  select(Country, Happiness.Rank, Happiness.Score)

twentyeighteen2 <- twentyeighteen %>%
  select(Country.or.region, Overall.rank, Score)

twentynineteen2 <- twentynineteen %>%
  select(Country.or.region, Overall.rank, Score)

# now I need to change column names in order to do an rbind

colnames(twentyfifteen2) <- c("Country", "Rank", "Score")
colnames(twentysixteen2) <- c("Country", "Rank", "Score")
colnames(twentyseventeen2) <- c("Country", "Rank", "Score")
colnames(twentyeighteen2) <- c("Country", "Rank", "Score")
colnames(twentynineteen2) <- c("Country", "Rank", "Score")

# now I need to add a new column to each in order to not lose track of the year

twentyfifteen2$Year <- 2015
twentysixteen2$Year <- 2016
twentyseventeen2$Year <- 2017
twentyeighteen2$Year <- 2018
twentynineteen2$Year <- 2019


fifteen_to_nineteen <- rbind(twentyfifteen2, twentysixteen2, twentyseventeen2, twentyeighteen2, twentyni


usa_happiness_score <- fifteen_to_nineteen %>%
  filter(Country == "United States")


canada_happiness_score <- fifteen_to_nineteen %>%
  filter(Country == "Canada")


mexico_happiness_score <- fifteen_to_nineteen %>%
  filter(Country == "Mexico")

library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 3.6.2
```

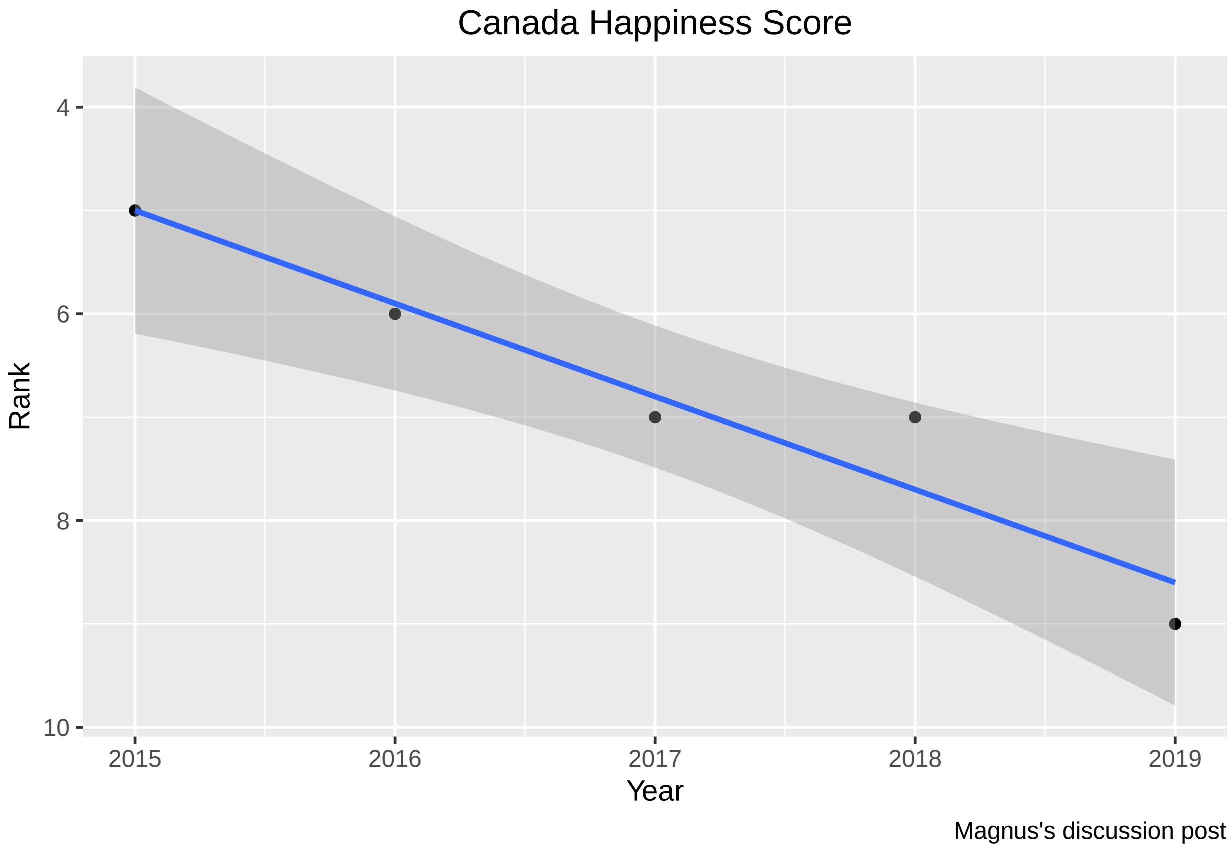
```
ggplot(usa_happiness_score, aes(x = Year, y = Rank)) +
  geom_point() +
  geom_smooth(method = "lm") +
  scale_y_continuous(trans = "reverse") +
  labs(title="USA Happiness Score") +
theme(plot.title = element_text(hjust = 0.5)) +
labs(caption = "Magnus's discussion post")
```

```
## `geom_smooth()` using formula 'y ~ x'
```



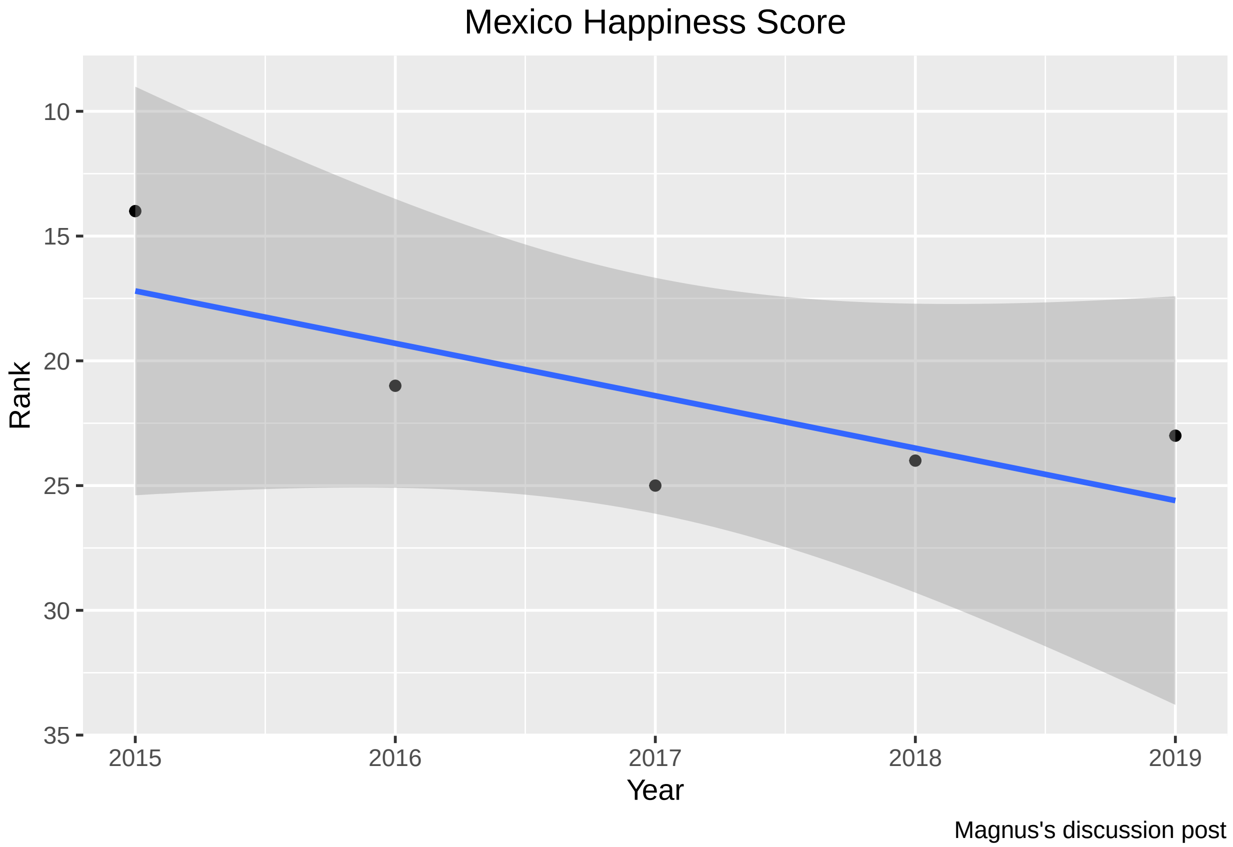
```
ggplot(canada_happiness_score, aes(x = Year, y = Rank)) +
  geom_point() +
  geom_smooth(method = "lm") +
  scale_y_continuous(trans = "reverse") +
  labs(title="Canada Happiness Score") +
theme(plot.title = element_text(hjust = 0.5)) +
labs(caption = "Magnus's discussion post")
```

```
## `geom_smooth()` using formula 'y ~ x'
```



```
ggplot(mexico_happiness_score, aes(x = Year, y = Rank)) +
  geom_point() +
  geom_smooth(method = "lm") +
  scale_y_continuous(trans = "reverse") +
  labs(title="Mexico Happiness Score") +
theme(plot.title = element_text(hjust = 0.5)) +
labs(caption = "Magnus's discussion post")
```

```
## `geom_smooth()` using formula 'y ~ x'
```

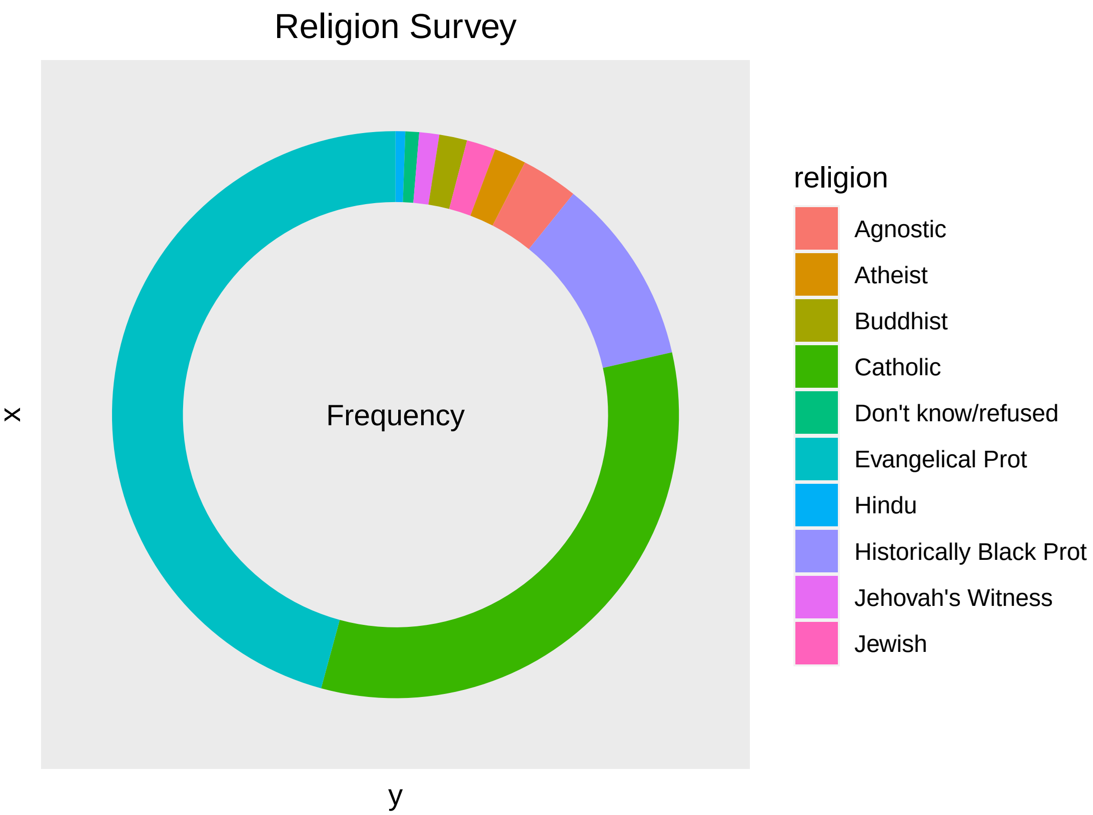


```
# Happiness Scores are getting worse in North America!
```

Including Plots

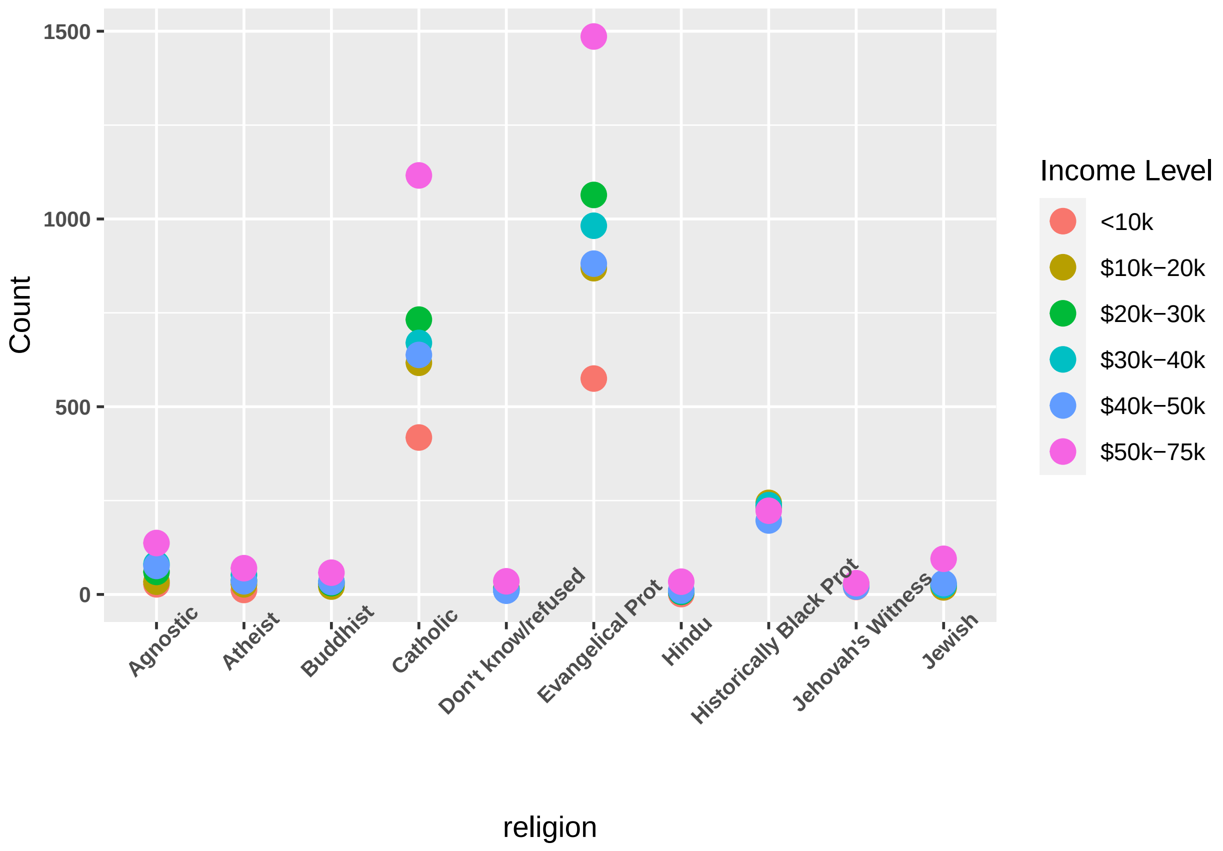
You can also embed plots, for example:

```
## Warning: ‘data_frame()‘ is deprecated as of tibble 1.1.0.
## Please use ‘tibble()‘ instead.
## This warning is displayed once every 8 hours.
## Call ‘lifecycle::last_warnings()‘ to see where this warning was generated.
```



John's discussion post

```
## Warning: package 'tidyr' was built under R version 3.6.2

## tibble [60 x 3] (S3: tbl_df/tbl/data.frame)
##  $ religion    : chr [1:60] "Agnostic" "Atheist" "Buddhist" "Catholic" ...
##  $ Income Level: chr [1:60] "<10k" "<10k" "<10k" "<10k" ...
##  $ Count       : num [1:60] 27 12 27 418 15 575 1 228 20 19 ...
```



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

```
## Parsed with column specification:
## cols(
##   .default = col_double(),
##   `Area Abbreviation` = col_character(),
##   Area = col_character(),
##   Item = col_character(),
##   Element = col_character(),
##   Unit = col_character()
## )

## See spec(...) for full column specifications.

## # A tibble: 6 x 63
##   `Area Abbreviat~ `Area Code` Area  `Item Code` Item  `Element Code` Element
##   <chr>                  <dbl> <chr>       <dbl> <chr>          <dbl> <chr>
## 1 AFG                        2 Afgh~        2511 Whea~           5142 Food
## 2 AFG                        2 Afgh~        2805 Rice~           5142 Food
## 3 AFG                        2 Afgh~        2513 Barl~           5521 Feed
## 4 AFG                        2 Afgh~        2513 Barl~           5142 Food
## 5 AFG                        2 Afgh~        2514 Maiz~           5521 Feed
## 6 AFG                        2 Afgh~        2514 Maiz~           5142 Food
## # ... with 56 more variables: Unit <chr>, latitude <dbl>, longitude <dbl>,
## #   Y1961 <dbl>, Y1962 <dbl>, Y1963 <dbl>, Y1964 <dbl>, Y1965 <dbl>,
## #   Y1966 <dbl>, Y1967 <dbl>, Y1968 <dbl>, Y1969 <dbl>, Y1970 <dbl>,
## #   Y1971 <dbl>, Y1972 <dbl>, Y1973 <dbl>, Y1974 <dbl>, Y1975 <dbl>,
## #   Y1976 <dbl>, Y1977 <dbl>, Y1978 <dbl>, Y1979 <dbl>, Y1980 <dbl>,
## #   Y1981 <dbl>, Y1982 <dbl>, Y1983 <dbl>, Y1984 <dbl>, Y1985 <dbl>,
## #   Y1986 <dbl>, Y1987 <dbl>, Y1988 <dbl>, Y1989 <dbl>, Y1990 <dbl>,
## #   Y1991 <dbl>, Y1992 <dbl>, Y1993 <dbl>, Y1994 <dbl>, Y1995 <dbl>,
## #   Y1996 <dbl>, Y1997 <dbl>, Y1998 <dbl>, Y1999 <dbl>, Y2000 <dbl>,
## #   Y2001 <dbl>, Y2002 <dbl>, Y2003 <dbl>, Y2004 <dbl>, Y2005 <dbl>,
## #   Y2006 <dbl>, Y2007 <dbl>, Y2008 <dbl>, Y2009 <dbl>, Y2010 <dbl>,
## #   Y2011 <dbl>, Y2012 <dbl>, Y2013 <dbl>
```

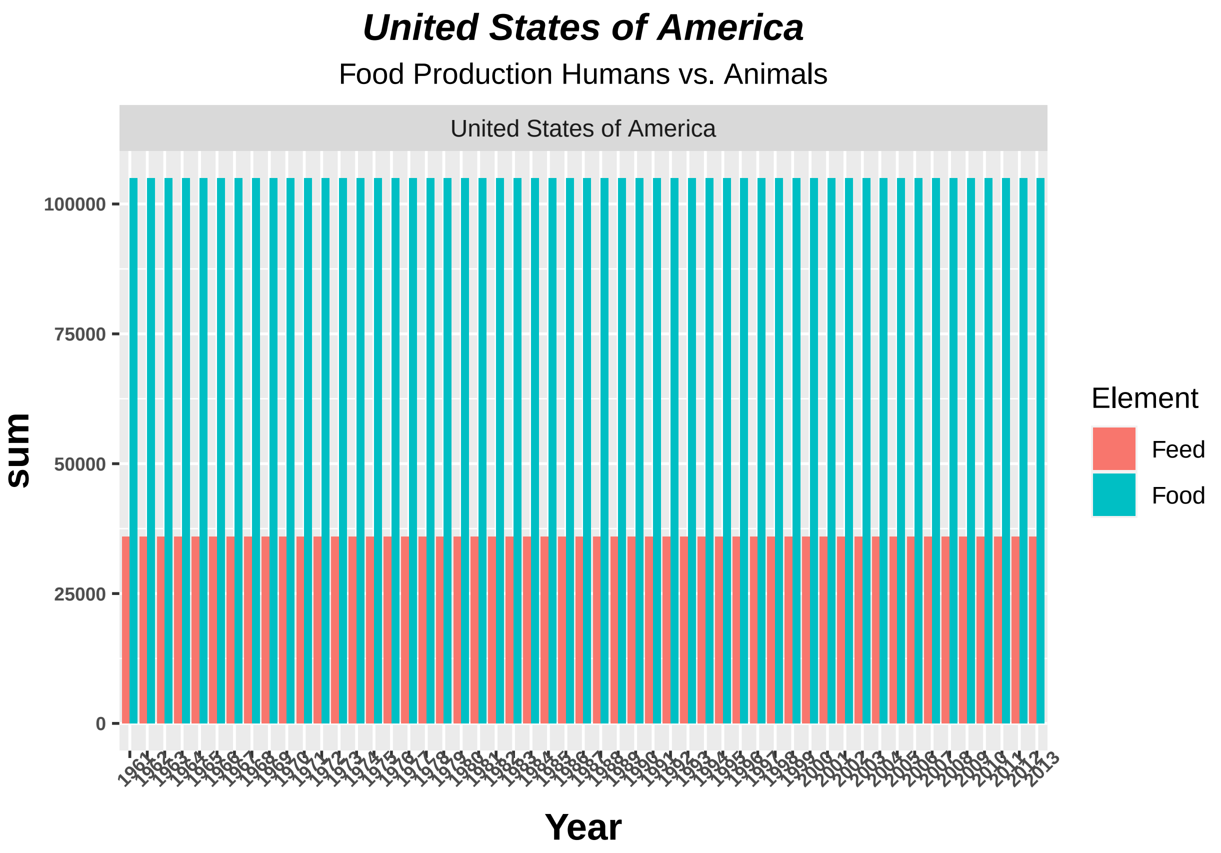
```
## [1] 21477    63
```

```
## # A tibble: 6 x 12
##   ‘Area Abbreviat~ ‘Area Code‘ Area  ‘Item Code‘ Item  ‘Element Code‘ Element
##   <chr>                  <dbl> <chr>       <dbl> <chr>          <dbl> <chr>
## 1 AFG                        2 Afgh~        2511 Whea~           5142 Food
## 2 AFG                        2 Afgh~        2805 Rice~           5142 Food
## 3 AFG                        2 Afgh~        2513 Barl~           5521 Feed
## 4 AFG                        2 Afgh~        2513 Barl~           5142 Food
## 5 AFG                        2 Afgh~        2514 Maiz~           5521 Feed
## 6 AFG                        2 Afgh~        2514 Maiz~           5142 Food
## # ... with 5 more variables: Unit <chr>, latitude <dbl>, longitude <dbl>,
## #   Year <chr>, Count <dbl>
```

```
## [1] Food Feed
## Levels: Feed Food
```

```
## [1] 1000 tonnes
## Levels: 1000 tonnes
```

```
## ‘summarise()‘ regrouping output by ’Area’, ’Year’ (override with ‘.groups‘ argument)
```


United States of America
Food Production Humans vs. Animals
United States of America
sum
100000
75000
50000
25000
0
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
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1980
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2008
2009
2010
2011
2012
2013
Year
Element
Feed
Food