Meteorite Analysis

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26/12/2020

Contents

1. Read the cleaned data into R.

```
library(tidyverse)
library(rmarkdown)
library(pander)
library(latexpdf)

meteorite_clean <- read_csv("/Users/Natifu/github_projects/meteorite_analysis/clean_data/meteorite_clean
```

2. Find the names and years found for the 10 largest meteorites in the data.

```
meteorite_clean %>%
  slice_max(mass, n = 10) %>%
  mutate(mass_kg = mass/1000) %>%
  select(name, year, mass_kg) %>%
  pander()
```

name	year	mass_kg
Hoba	1920	60000
Cape York	1818	58200
Campo del Cielo	NA	50000
Canyon Diablo	1891	30000
Armanty	1898	28000
Gibeon	1836	26000
Chupaderos	1852	24300

name	year	mass_kg
Mundrabilla	1911	24000
Sikhote-Alin	1947	23000
Bacubirito	1863	22000

3. Find the average mass of meteorites that were recorded falling, vs. those which were just found.

```
meteorite_clean %>%
  group_by(fall) %>%
  summarise(avg_mass = mean(mass)) %>%
  pander()
```

fall	avg_mass
Fell	68033
Found	133354

4. Find the number of meteorites in each year, for every year since 2000.

```
meteorite_clean %>%
  filter(year >= 2000) %>%
  group_by(year) %>%
  summarise(number_discoveries = n()) %>%
  pander()
```

year	number_discoveries
2000	235
2001	186
2002	203
2003	209
2004	141
2005	146
2006	167
2007	71
2008	96
2009	103
2010	89
2011	121
2012	53
2013	2

5. Visualise results

```
meteorite_clean %>%
  filter(year >= 2000) %>%
```

```
  group_by(year) %>%
  summarise(number_discoveries = n()) %>%
  ggplot(aes(x = year, y = number_discoveries)) +
  geom_col(alpha = 0.8, colour = "white", fill = "dark green") +
  scale_x_continuous(breaks = c(2000, 2001, 2002, 2003, 2004,
                                2005, 2006, 2007, 2008, 2009,
                                2010, 2011, 2012, 2013),
                     expand = c(0.02, 0.02)) +
  scale_y_continuous(breaks = c(0, 25, 50, 75, 100, 125, 150, 175, 200, 225, 250),
                     limits = c(0, 250),
                     expand = c(0, 0)) +
  labs(title = "Number of Meteorite Discoveries", subtitle = "from 2000 to 2013",
       x = "Year", y = "Discoveries") +
  theme_light()
```