

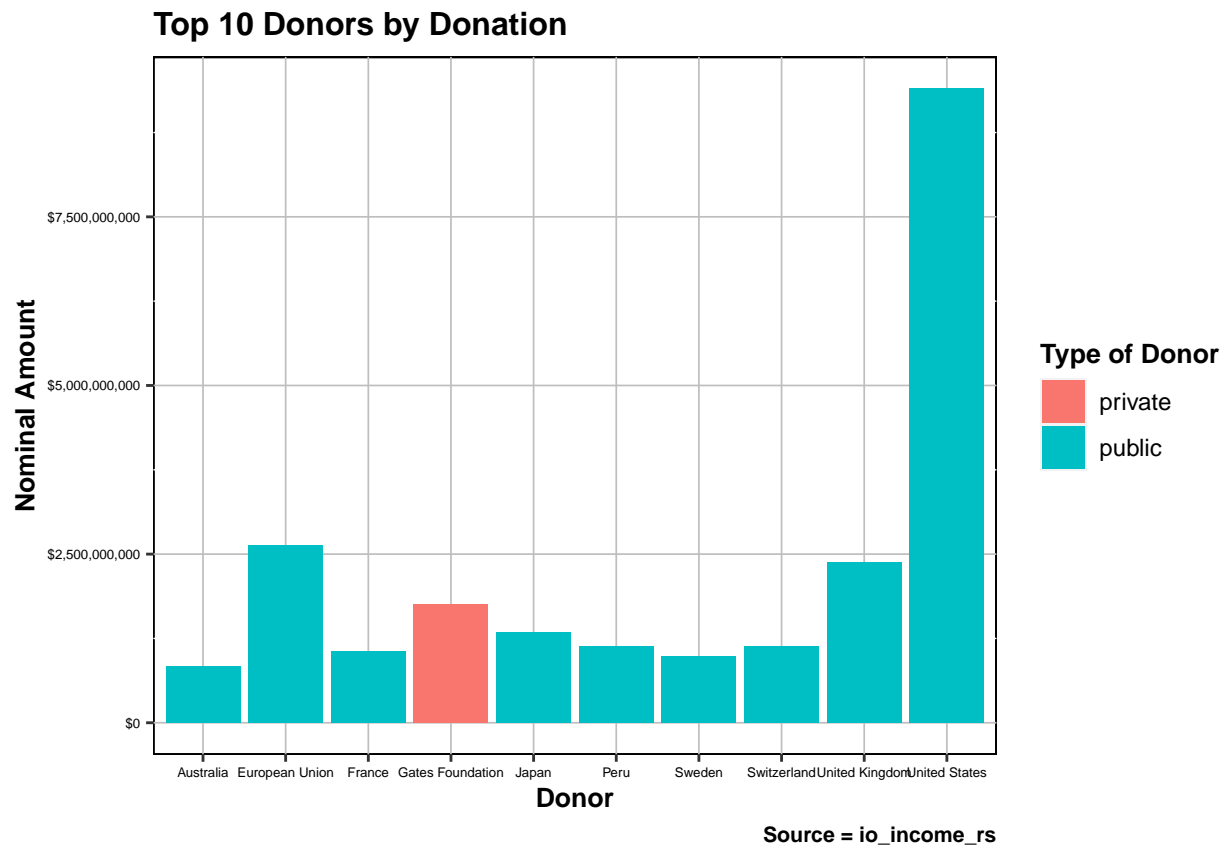
Homework Week 3

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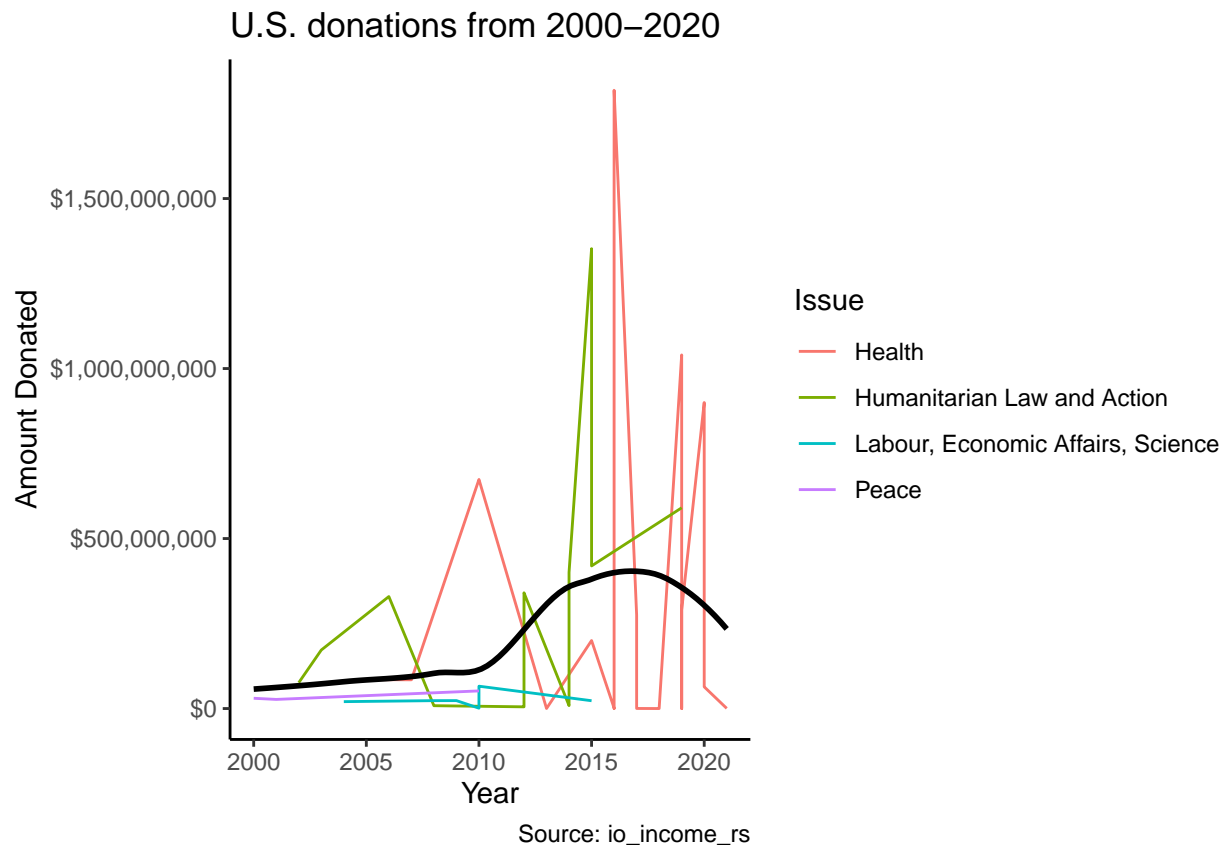
Question 1

```
io_income_rs %>%
  group_by(donor, type_donor) %>%
  na.omit(donor) %>%
  summarize(amount_nominal = sum(amount_nominal, na.rm = TRUE)) %>%
  arrange(desc(amount_nominal)) %>%
  ungroup() %>%
  slice_head(n=10) %>%
  ggplot(aes(x = donor, reorder(decreasing = FALSE),
             y = amount_nominal, fill = type_donor)) +
  geom_col() +
  labs(title = "Top 10 Donors by Donation",
       x = "Donor",
       y = "Nominal Amount",
       fill = "Type of Donor",
       caption = "Source = io_income_rs") +
  scale_y_continuous(labels = scales::dollar) +
  theme(panel.background = element_rect("white", "black", .5, "solid"),
        panel.grid.major = element_line(color = "grey",
                                          size = 0.3,
                                          linetype = "solid"),
        axis.text = element_text(color = "black", size = 5),
        title = element_text(color = "black", size = 10, face = "bold"),
        legend.title = element_text(color = "black"),
        plot.subtitle = element_text(color = "black", size = 9, face = "plain"),
        legend.position = "right")
```



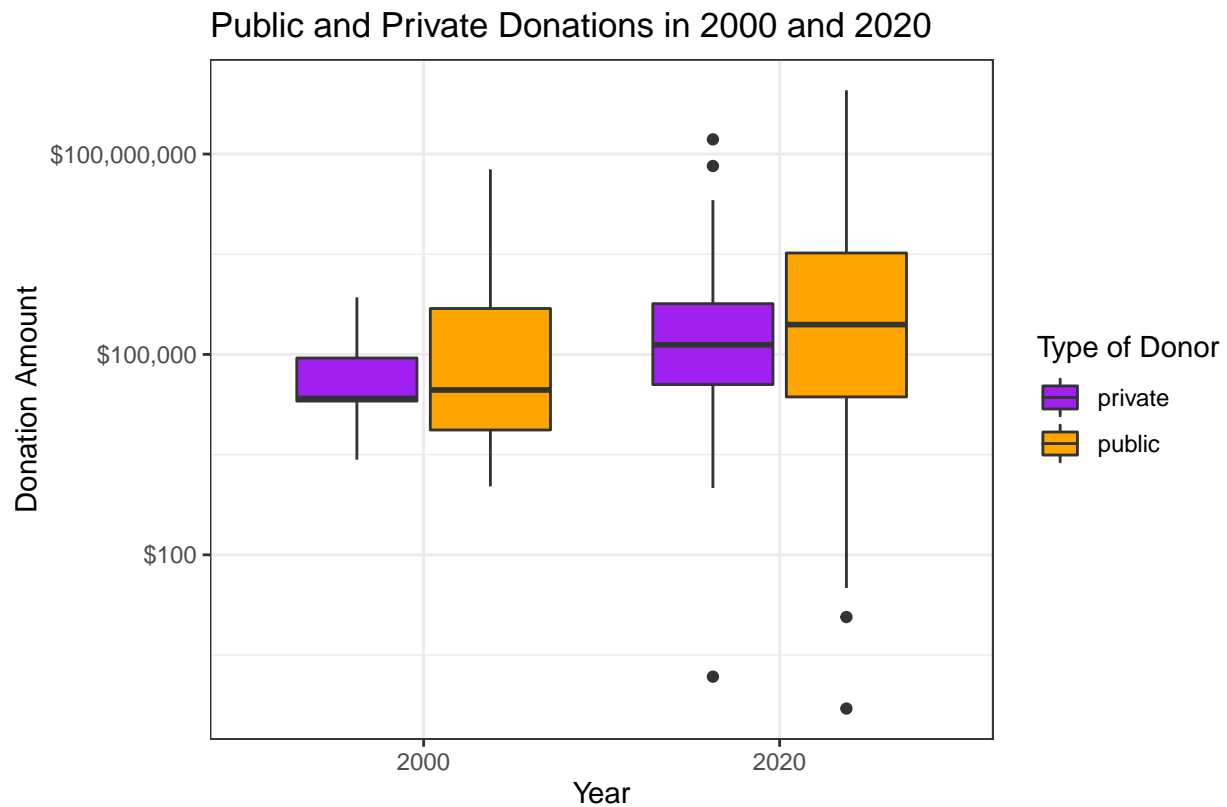
Question 2

```
io_income_rs %>%
  filter(donor == "United States") %>%
  rename(Issue = issue_area) %>%
  ggplot(aes(x = year, y = amount_nominal)) + # adds a first ggplot2 layer
  geom_line(aes(color = Issue)) +
  scale_y_continuous(labels = scales::dollar) +
  geom_smooth(se = FALSE, color = "black") +
  labs(title = "U.S. donations from 2000-2020",
        x = "Year",
        y = "Amount Donated",
        fill = "Issue Area",
        caption = "Source: io_income_rs") +
  theme_classic()
```



Question 3

```
io_income_rs %>%
  filter(year == 2000 | year == 2020) %>%
  na.omit() %>%
  ggplot(aes(x = as.factor(year), y = amount_nominal, fill = (type_donor))) +
    geom_boxplot() +
    labs(title = "Public and Private Donations in 2000 and 2020",
         x = "Year",
         y = "Donation Amount",
         fill = "Type of Donor",
         caption = "Source: io_income_rs") +
    scale_y_log10(labels = scales::dollar) +
    scale_fill_manual(values = c("purple", "orange")) +
    theme_bw()
```

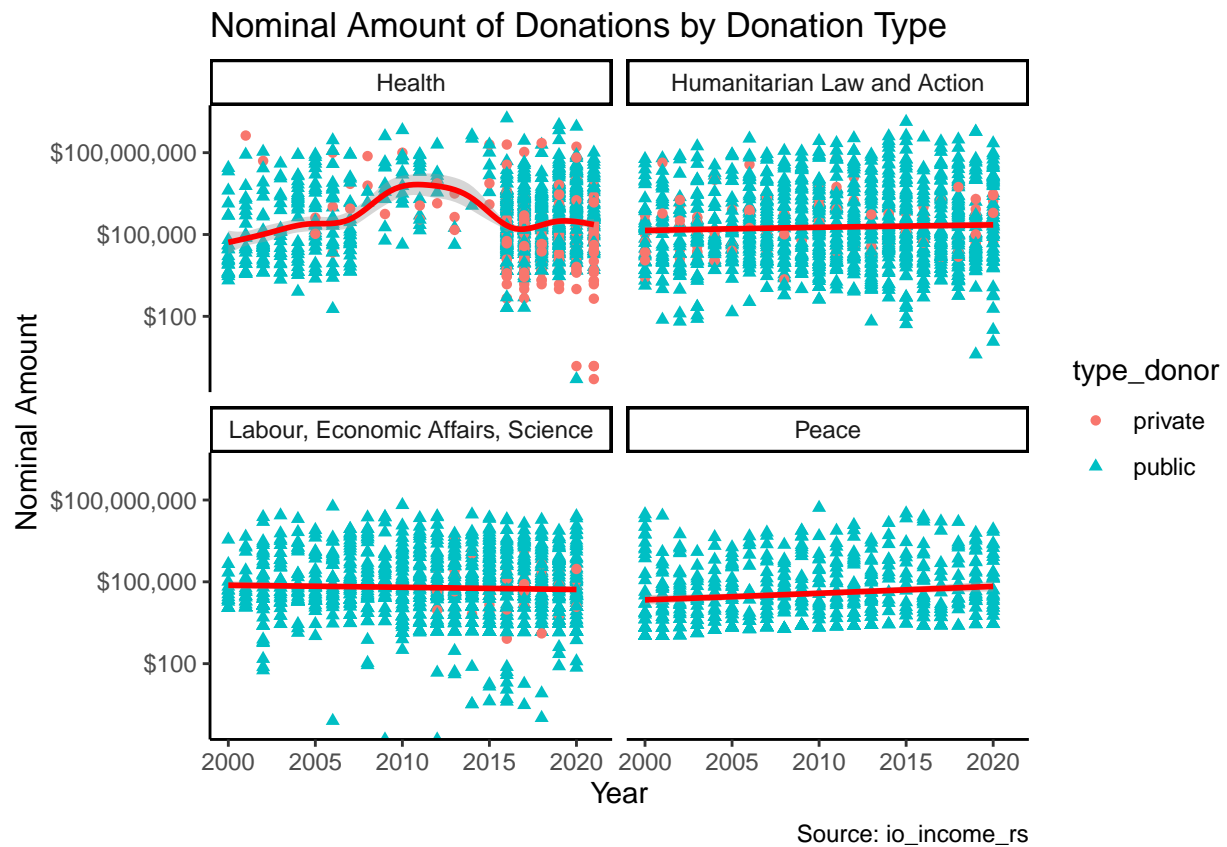


Source: io_income_rs

Yes, there are outliers for both private and public donations but only in 2020.

Question 4

```
io_income_rs %>%
  group_by(issue_area) %>%
  na.omit(type_donor) %>%
  ggplot(aes(x = year, y = amount_nominal)) +
  geom_point(aes(shape = type_donor, color = type_donor)) +
  geom_smooth(color = "red") +
  facet_wrap(~issue_area) +
  labs(title = "Nominal Amount of Donations by Donation Type",
       x = "Year",
       y = "Nominal Amount",
       fill = "Type of Donor",
       caption = "Source: io_income_rs") +
  scale_y_log10(labels = scales::dollar) +
  theme_classic()
```



I also did the donor type by color because the shape did not make the data clear as well as scaled the nominal amount to make the data more readable.