Type of Visualizations Exercise

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Dataset: Gapminder

```
install.packages("dplyr")
```

```
## Installing package into '/home/2024MCS110023/R/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
```

```
library(dplyr)
```

```
##
## 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
```

```
install.packages("ggplot2")
```

```
## Installing package into '/home/2024MCS110023/R/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
```

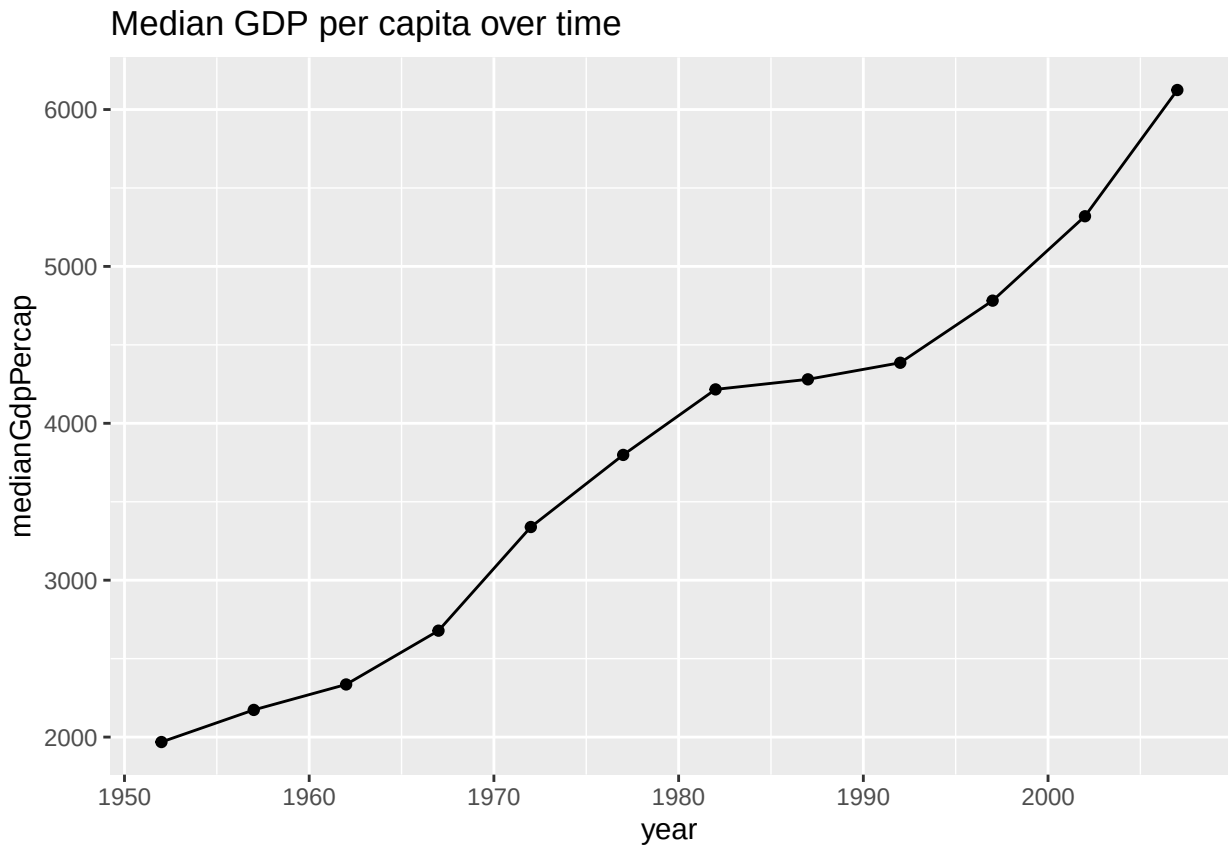
```
library(ggplot2)
install.packages("gapminder")
```

```
## Installing package into '/home/2024MCS110023/R/x86_64-pc-linux-gnu-library/4.3'
## (as 'lib' is unspecified)
```

```
library(gapminder)
```

1. Create a line plot showing the median GDP per capita over time.

```
by_year <- gapminder %>%
    group_by(year) %>%
    summarize(medianGdpPercap = median(gdpPercap))
ggplot(by_year, aes(x = year, y = medianGdpPercap)) +
    geom_line()+geom_point()+labs(title="Median GDP per capita over time")
```

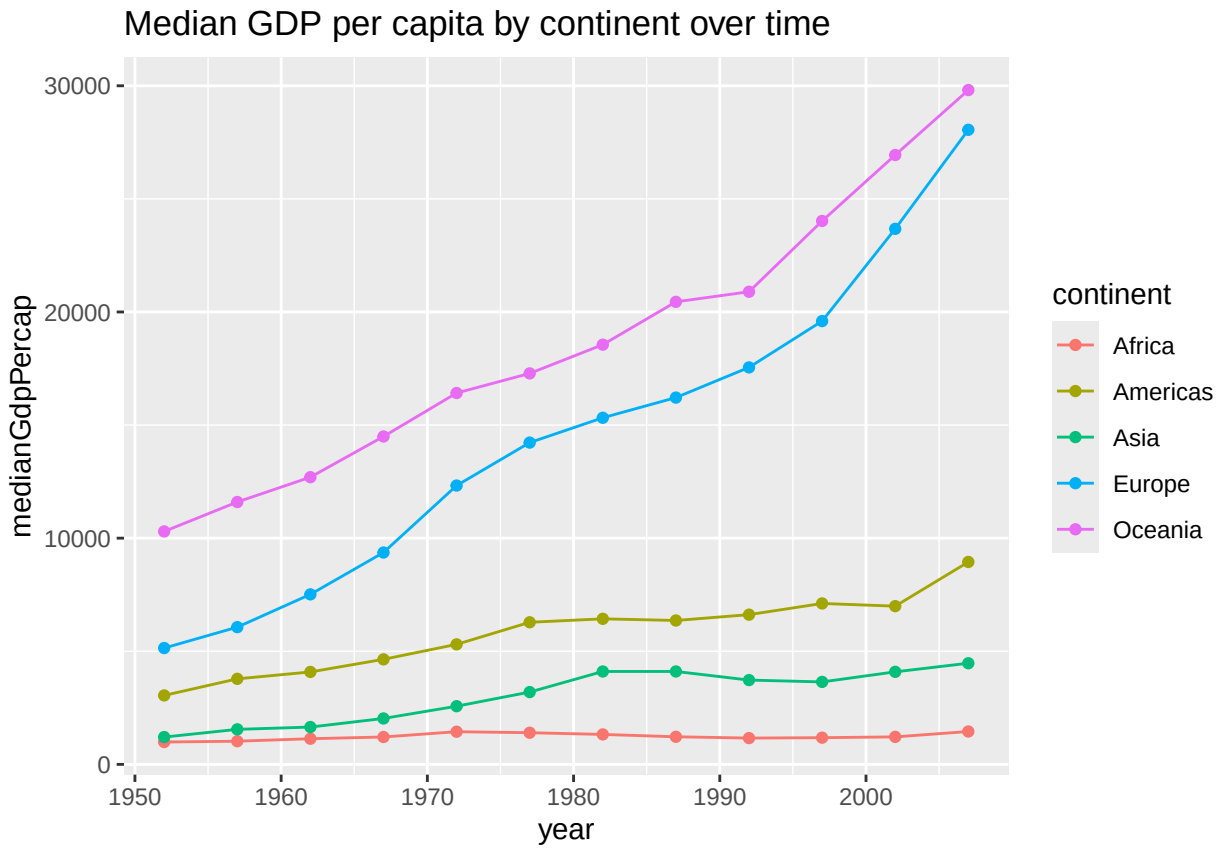


2. Create a line plot showing the change in median GDP per capita by continent over time.

```
by_year_continent <- gapminder %>%
  group_by(year, continent) %>%
  summarize(medianGdpPercap = median(gdpPercap))
```

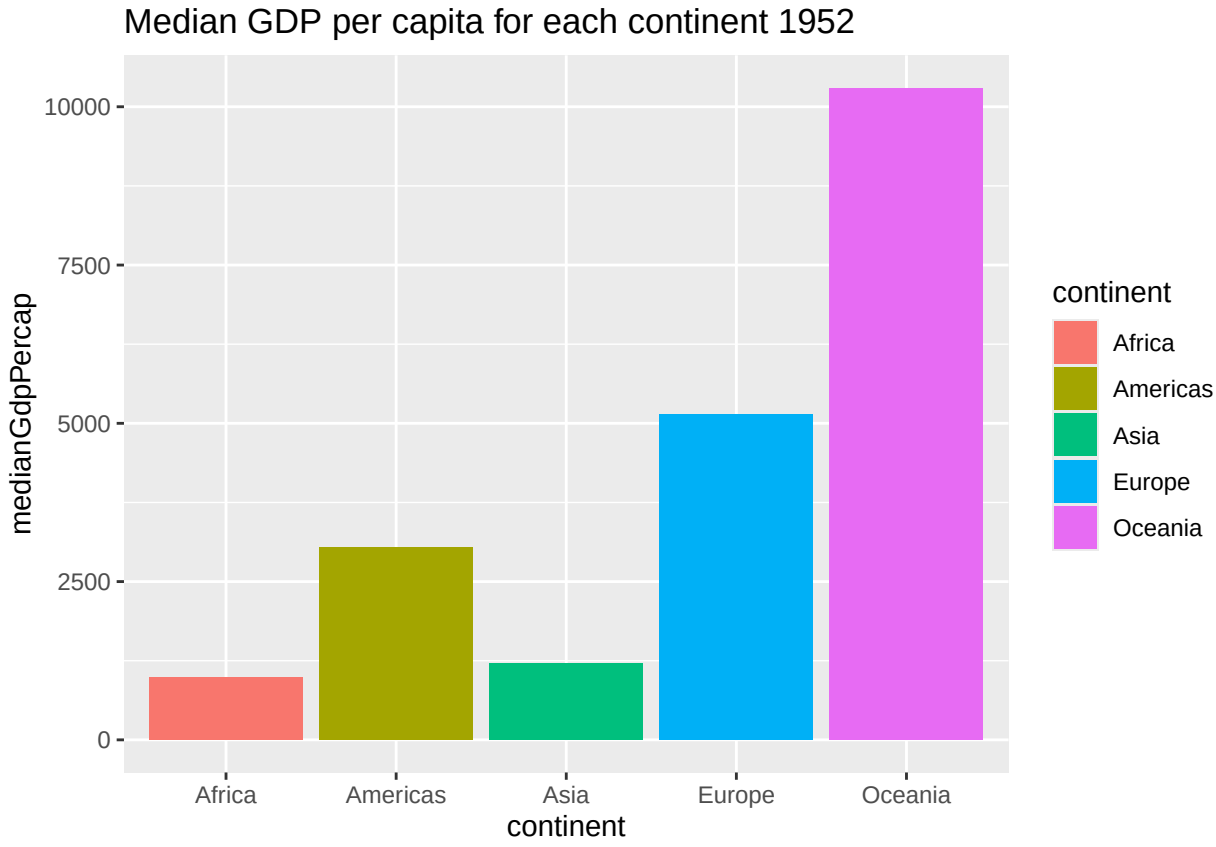
```
## `summarise()` has grouped output by 'year'. You can override using the
## `.groups` argument.
```

```
ggplot(by_year_continent, aes(x = year, y = medianGdpPercap, color = continent)) +
  geom_line()+geom_point()+labs(title="Median GDP per capita by continent over time")
```



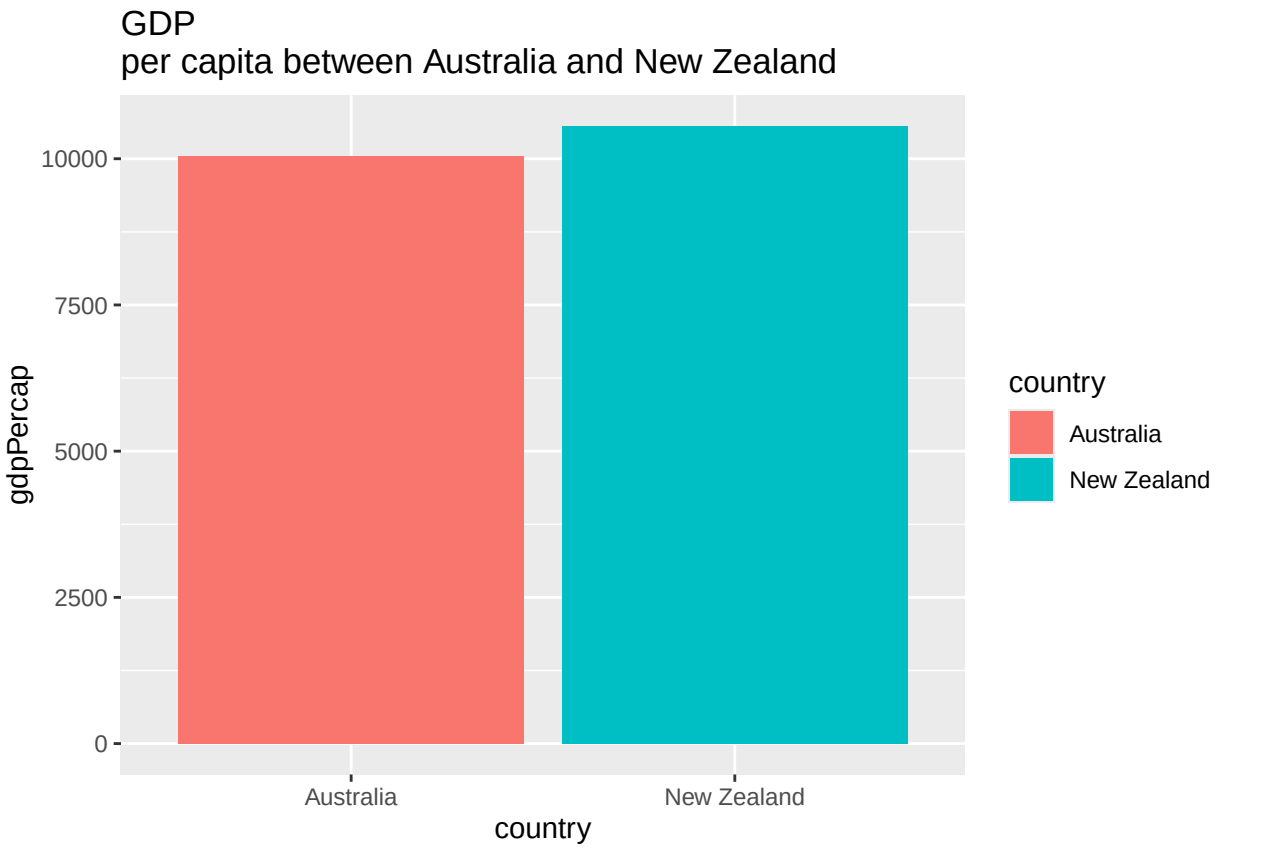
3. Create a bar plot showing the median GDP per capita for each continent in the year 1952.

```
by_continent <- gapminder %>%
  filter(year == 1952) %>%
  group_by(continent) %>%
  summarize(medianGdpPercap = median(gdpPercap))
ggplot(by_continent, aes(x = continent, y = medianGdpPercap,fill=continent)) +
  geom_col()+labs(title="Median GDP per capita for each continent 1952")
```



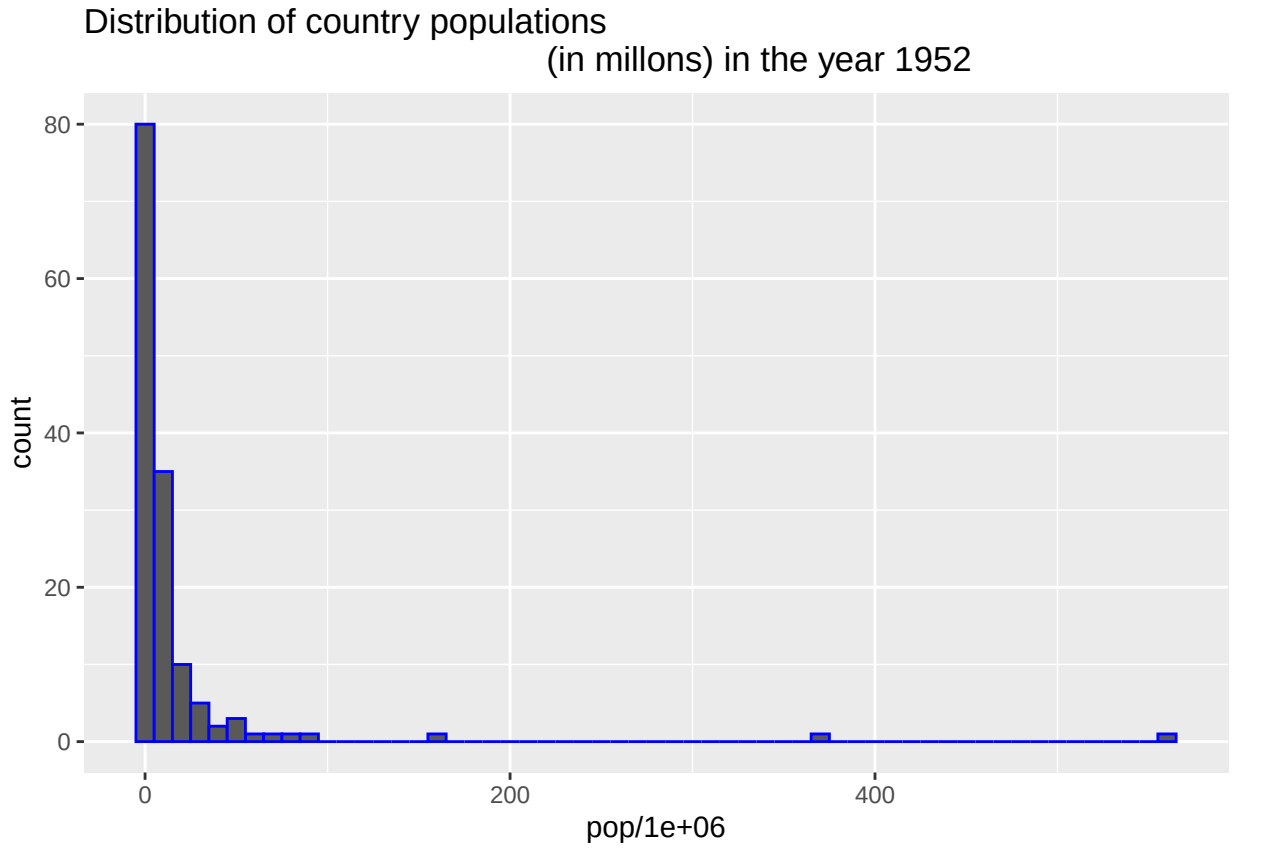
4. Filter for observations in the Oceania continent in the year 1952. Create a bar plot comparing the GDP per capita between Australia and New Zealand.

```
oceania_1952 <- gapminder %>%
  filter(continent == "Oceania", year == 1952)
ggplot(oceania_1952, aes(x = country, y = gdpPercap,fill=country)) +
  geom_col()+labs(title="GDP
per capita between Australia and New Zealand")
```



5. Create a histogram showing the distribution of country populations (in millions) in the year 1952.

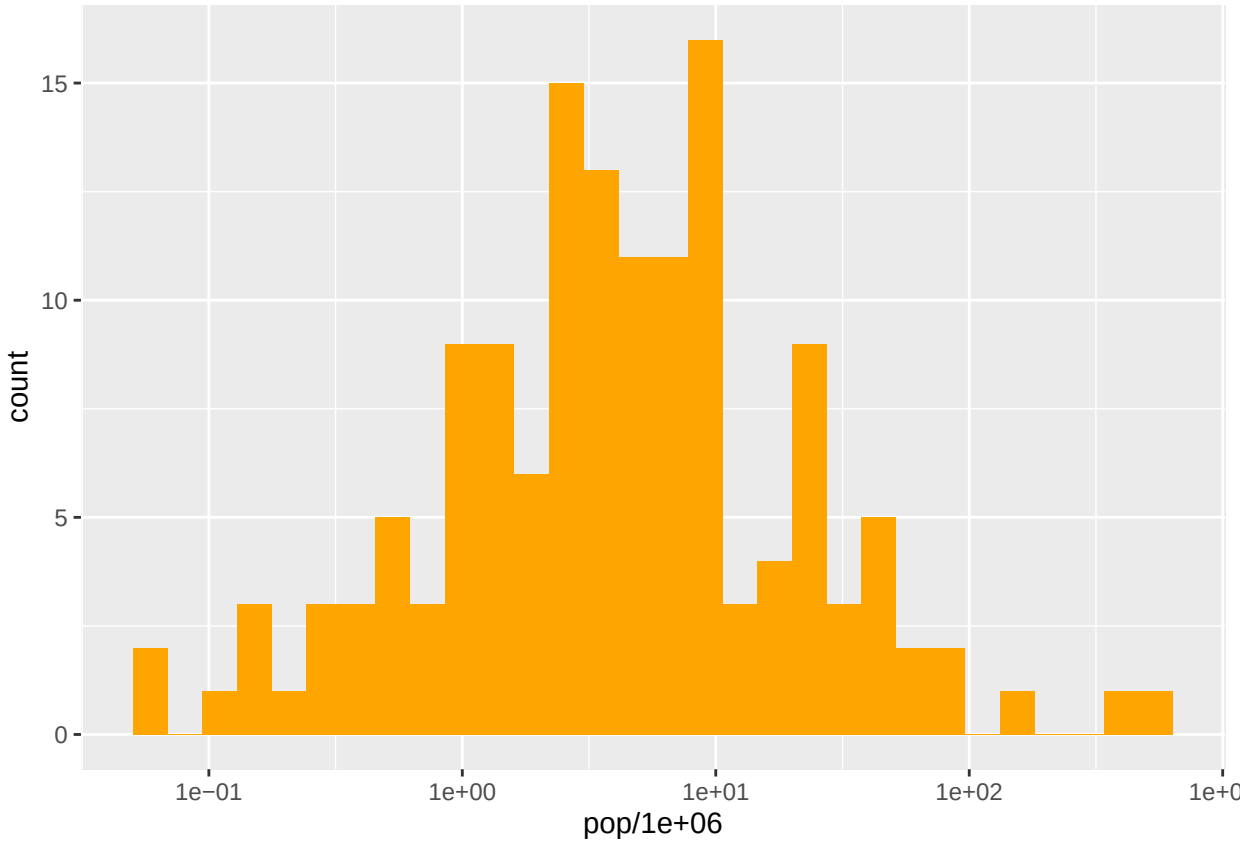
```
gapminder_1952 <- gapminder %>%
filter(year == 1952)
ggplot(gapminder_1952, aes(x = pop/1e6)) +
geom_histogram(binwidth = 10,color="blue")+labs(title = "Distribution of country populations
                                                (in millons) in the year 1952")
```



6. Create a histogram similar to the previous one but with the x-axis (population) on a logarithmic scale.

```
gapminder_1952 <- gapminder %>%
filter(year == 1952)
ggplot(gapminder_1952, aes(x = pop /1e6)) +
geom_histogram(fill="orange") +
scale_x_log10()
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



7. Create a boxplot comparing the distribution of GDP per capita among continents in the year 1952

```
gapminder_1952 <- gapminder %>%
filter(year == 1952)
ggplot(gapminder_1952, aes(x = continent, y = gdpPercap)) +
geom_boxplot() +
scale_y_log10()
```