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Problem Solving Using Python and R Lab

Lab14. Animated Data Visualization using R

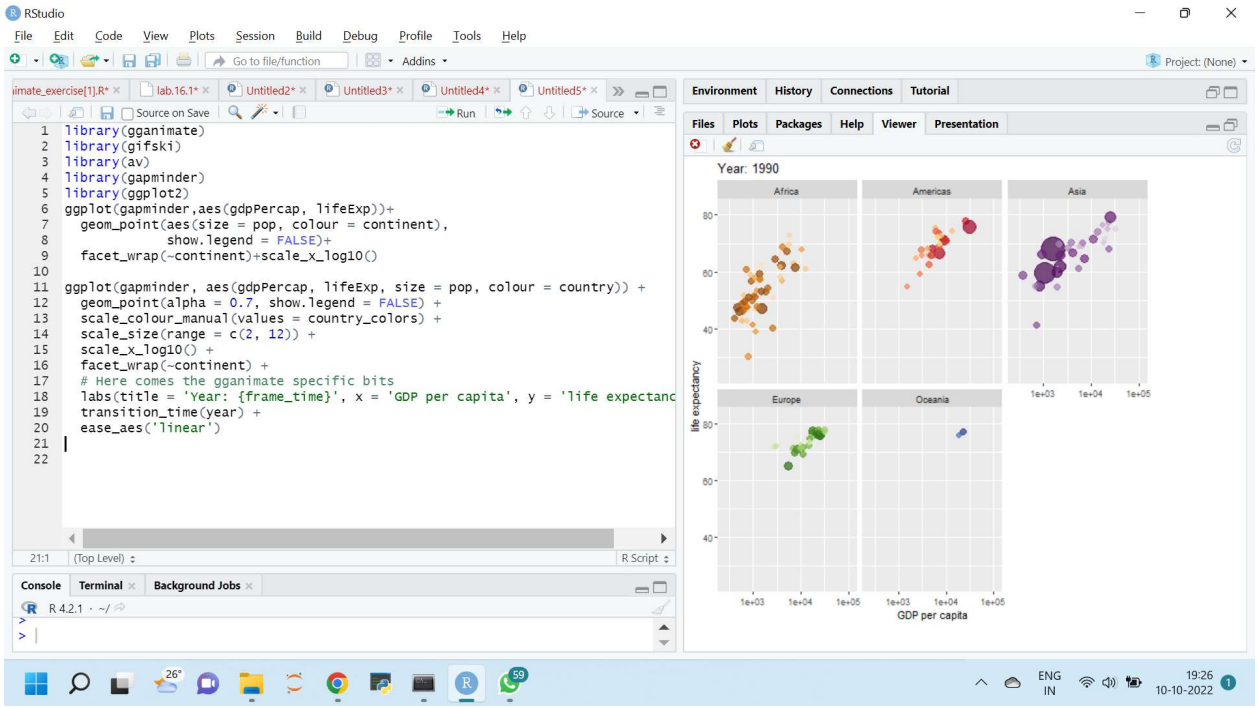
Question1. : Visualize animated bar chart, line chart and scatter plot using R and gganimate package.

Scatter plot

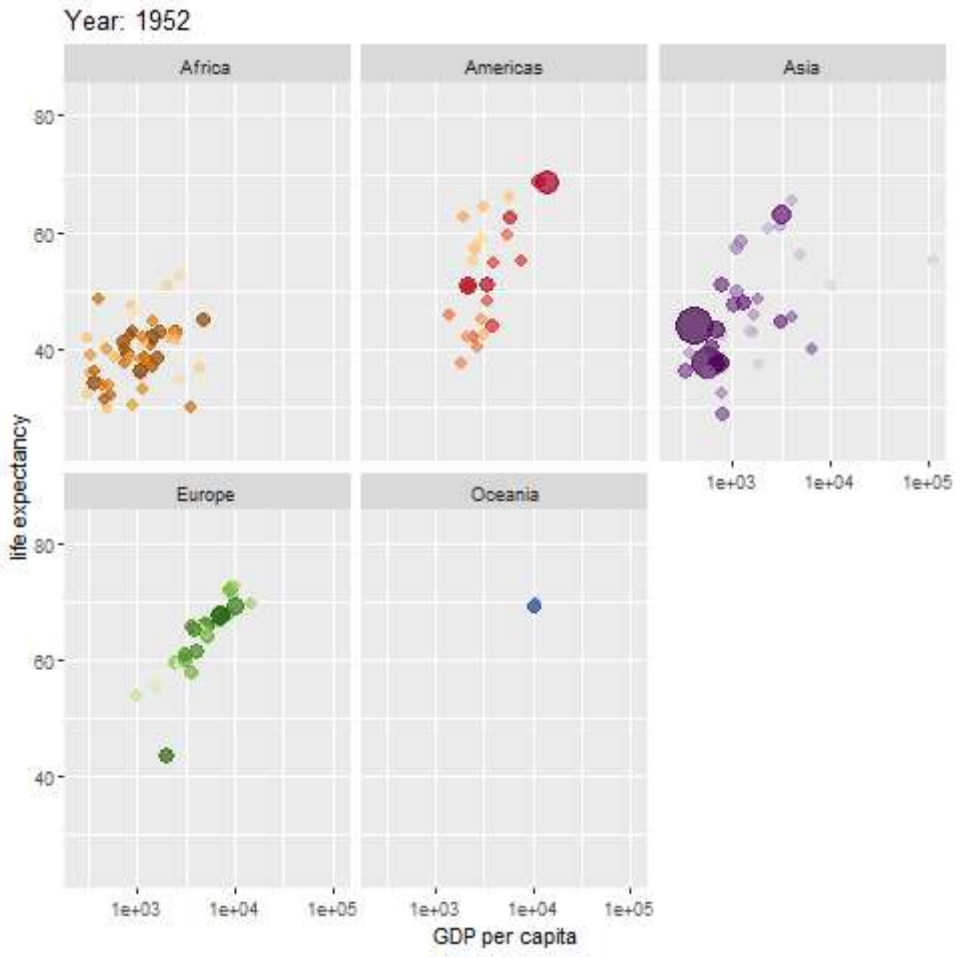
#Coding :

```
install.packages("gganimate")
install.packages("gifski")
install.packages("gapminder")
install.packages("ggplot2")
install.packages("av")
library(gganimate)
library(gifski)
library(av)
library(gapminder)
library(ggplot2)
ggplot(gapminder,aes(gdpPercap, lifeExp))+
  geom_point(aes(size = pop, colour = continent),
             show.legend = FALSE)+
  facet_wrap(~continent)+scale_x_log10()

ggplot(gapminder, aes(gdpPercap, lifeExp, size = pop, colour = country)) +
  geom_point(alpha = 0.7, show.legend = FALSE) +
  scale_colour_manual(values = country_colors) +
  scale_size(range = c(2, 12)) +
  scale_x_log10() +
  facet_wrap(~continent) +
  # Here comes the gganimate specific bits
  labs(title = 'Year: {frame_time}', x = 'GDP per capita', y = 'life expectancy') +
  transition_time(year) +
```

ease_aes('linear')



#Output :

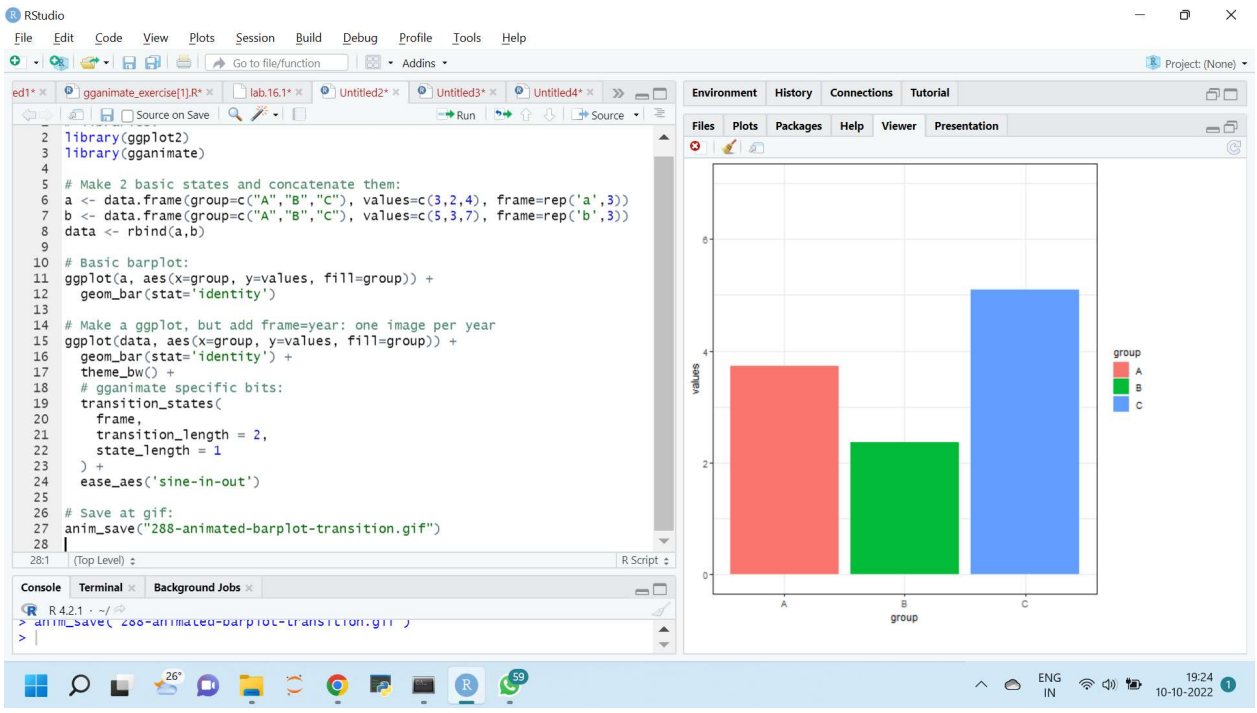


Bar chart

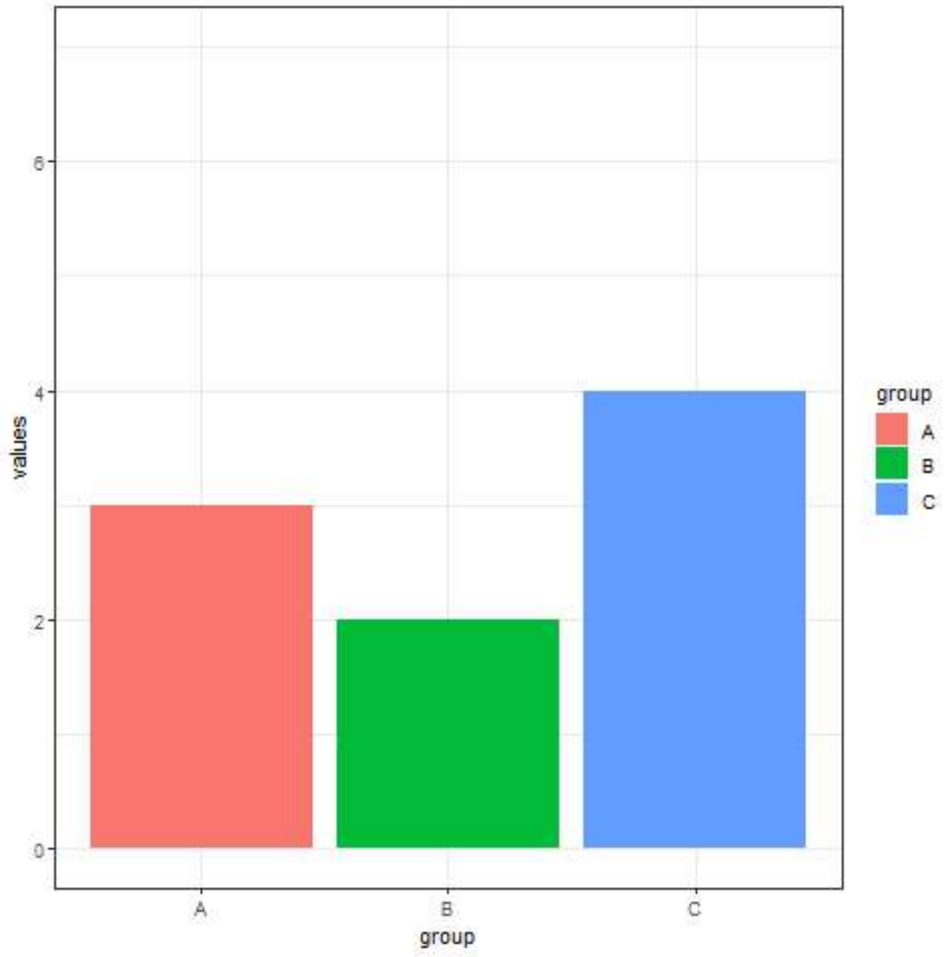
#Coding:

```
library(ggplot2)
library(gganimate)

a <- data.frame(group=c("A","B","C"), values=c(3,2,4), frame=rep('a',3))
b <- data.frame(group=c("A","B","C"), values=c(5,3,7), frame=rep('b',3))
data <- rbind(a,b)

ggplot(a, aes(x=group, y=values, fill=group)) +
  geom_bar(stat='identity')
```

```
ggplot(data, aes(x=group, y=values, fill=group)) +
  geom_bar(stat='identity') +
  theme_bw() +
   transition_states(
    frame,
    transition_length = 2,
    state_length = 1
  ) +
  ease_aes('sine-in-out')

anim_save("288-animated-barplot-transition.gif")
```



#Output :

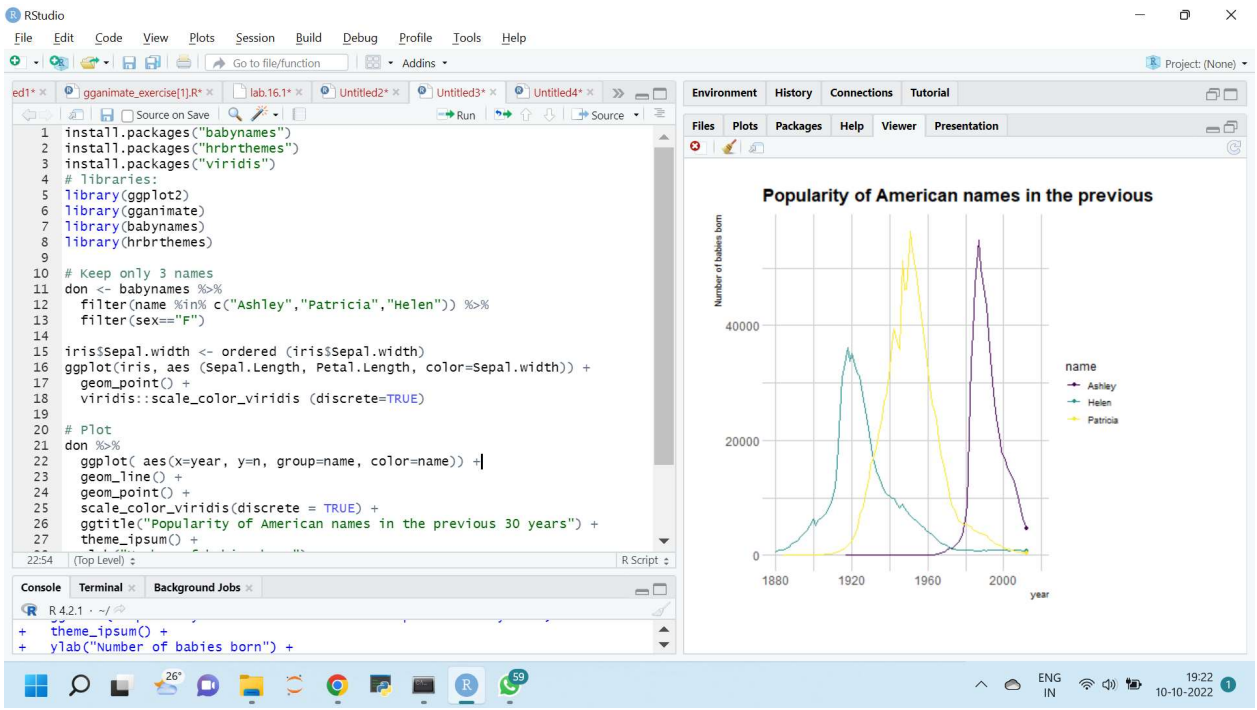


Line chart

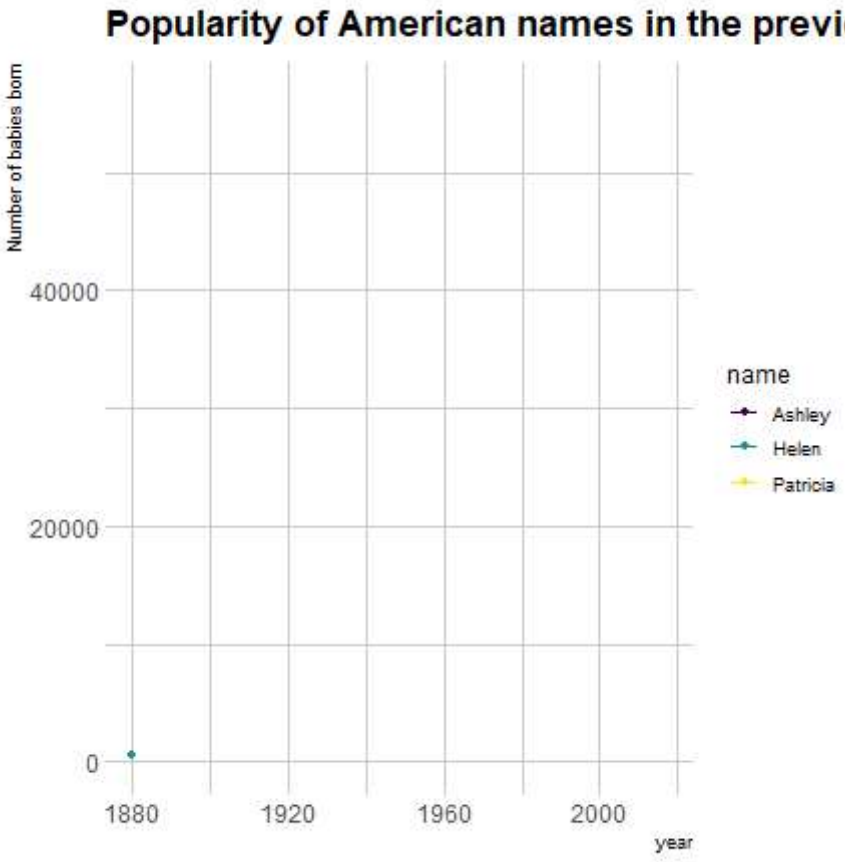
#Coding:

```
install.packages("babynames")
install.packages("hrbrthemes")
install.packages("viridis")

library(ggplot2)
library(gganimate)
library(babynames)
library(hrbrthemes)
```

```
don <- babynames %>%
  filter(name %in% c("Ashley","Patricia","Helen")) %>%
  filter(sex=="F")

iris$Sepal.width <- ordered (iris$Sepal.width)
ggplot(iris, aes (Sepal.Length, Petal.Length, color=Sepal.width)) +
  geom_point() +
  viridis::scale_color_viridis (discrete=TRUE)

don %>%
  ggplot( aes(x=year, y=n, group=name, color=name)) +
  geom_line() +
  geom_point() +
  scale_color_viridis(discrete = TRUE) +
  ggtitle("Popularity of American names in the previous 30 years") +
  theme_ipsum() +
  ylab("Number of babies born") +
  transition_reveal(year)

anim_save("287-smooth-animation-with-tweenr.gif")
```



#Output :


Popularity of American names in the previous
Number of babies born
40000
20000
0
1880
1920
1960
2000
year
name
Ashley
Helen
Patricia