

# SHETH L.U.J AND SIR M.V. COLLEGE

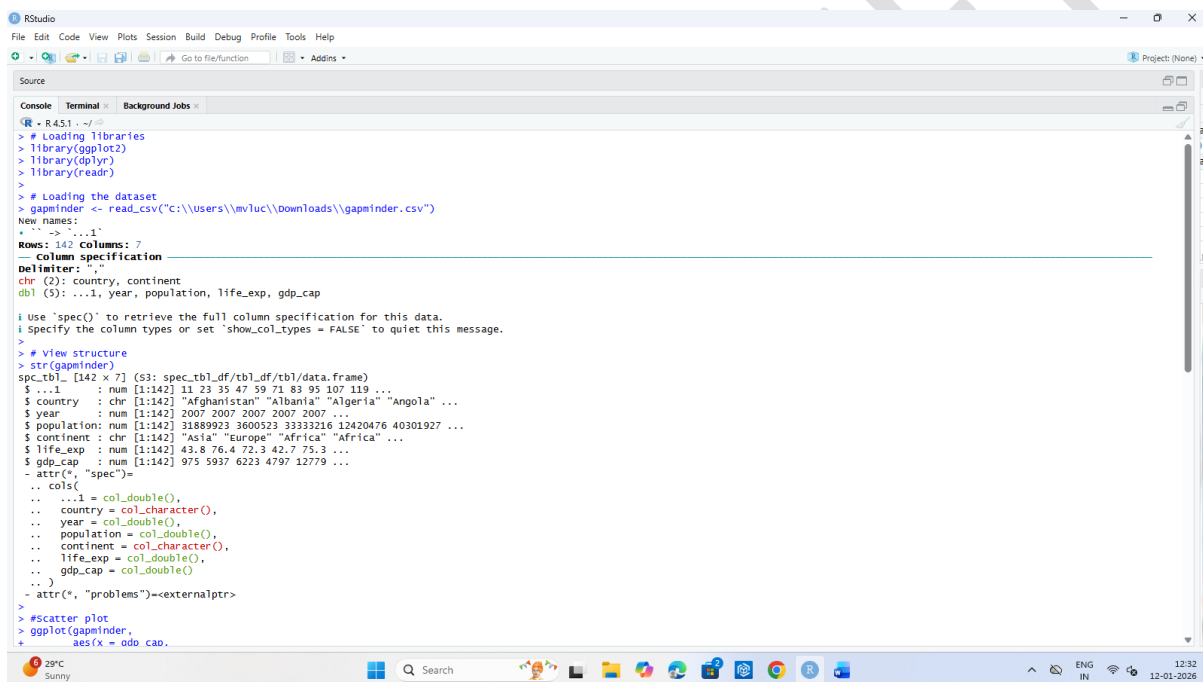
## SUBJECT :- DATA ANALYSIS WITH SAS/SPSS/R

### PRACTICAL – 10

**AIM:-** Creating graphical reports using ,ggplot2 (R).

- Scatter plot
- Pie chart
- High-Low chart

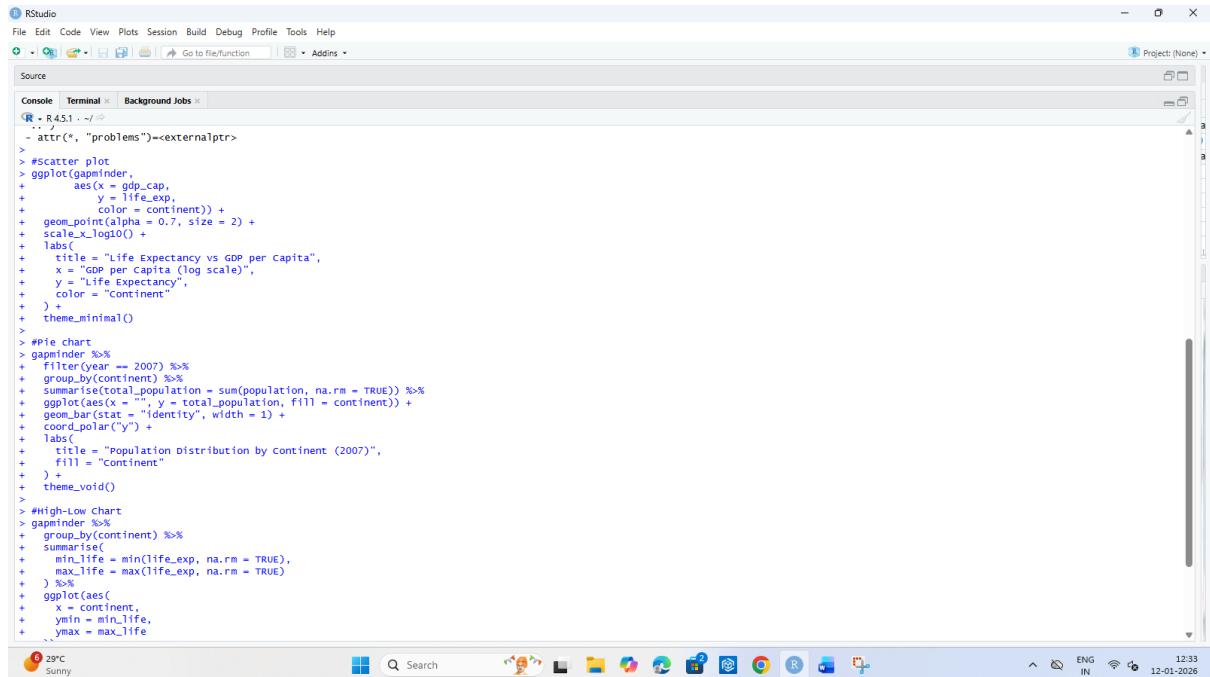
**Output:-**



```
R - R4.5.1
File Edit Code View Plots Session Build Debug Profile Tools Help
Source
Console Terminal Background Jobs
> # Loading libraries
> library(ggplot2)
> library(dplyr)
> library(readr)
>
> # Loading the dataset
> gapminder <- read_csv("c:\\users\\mv\\Downloads\\gapminder.csv")
New names:
  "" -> "...1"
Rows: 142 Columns: 7
Column specification
Delimiter: ","
chr (2): country, continent
dbl (5): ...1, year, population, life_exp, gdp_cap
i Use 'spec()' to retrieve the full column specification for this data.
i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
>
> # View structure
> str(gapminder)
'spc_tbl_ [142 x 7] (s3: spec_tbl_df/tbl_df/tbl/data.frame)
 $ ...1      : num [1:142] 11 23 39 47 59 71 83 95 107 119 ...
 $ country   : chr [1:142] "Afghanistan" "Albania" "Algeria" "Angola" ...
 $ year      : num [1:142] 2007 2007 2007 2007 2007 ...
 $ population: num [1:142] 31889923 3800523 33333216 12420476 40301927 ...
 $ continent : chr [1:142] "Asia" "Europe" "Africa" "Africa" ...
 $ life_exp  : num [1:142] 43.8 76.4 72.3 42.7 75.3 ...
 $ gdp_cap   : num [1:142] 975 5937 6223 4797 12779 ...
 - attr(*, "spec")=
   .. cols()
   ..   ...1 = col_double(),
   ..   country = col_character(),
   ..   year = col_double(),
   ..   population = col_double(),
   ..   continent = col_character(),
   ..   life_exp = col_double(),
   ..   gdp_cap = col_double()
   ..
 - attr(*, "problems")=externalptr>
>
> # Scatter plot
> ggplot(gapminder,
+       aes(x = gdp_cap,
```

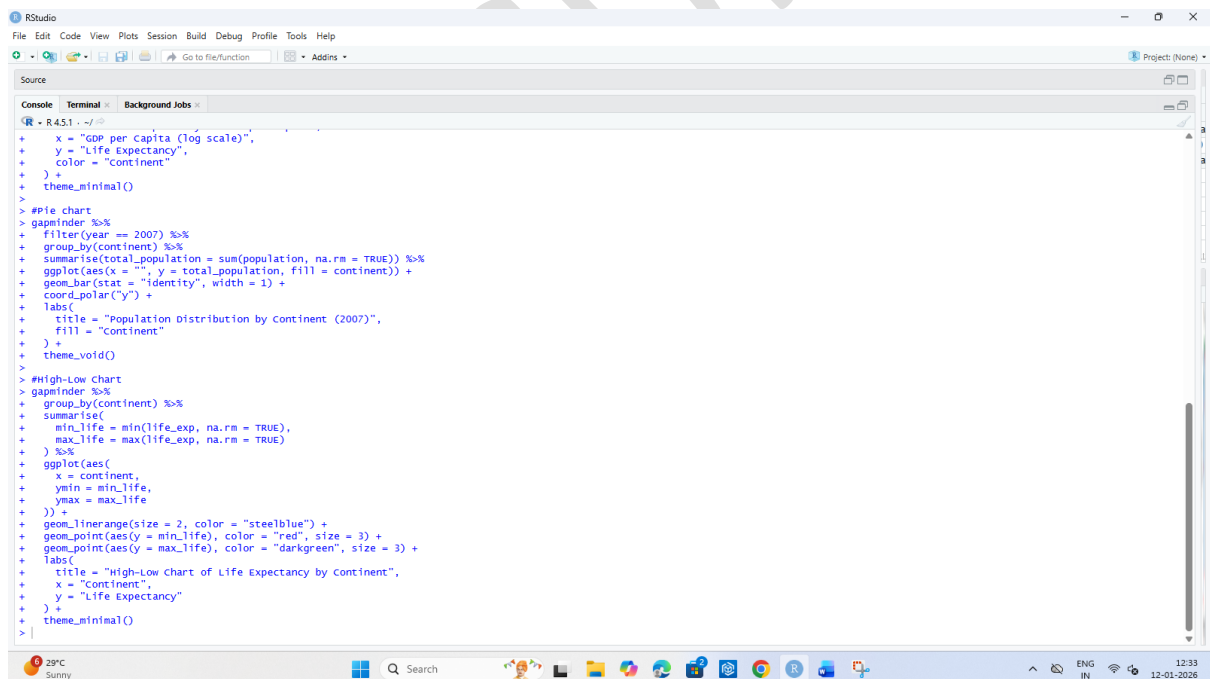
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RStudio
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Source
Console Terminal Background Jobs
R - R4.5.1 - ~/ -
- attr(*, "problems")=externalptr>
>
> #Scatter plot
> ggplot(gapinder,
+ aes(x = gdp_cap,
+ y = life_exp,
+ color = continent)) +
+ geom_point(alpha = 0.7, size = 2) +
+ scale_x_log10() +
+ labs(
+ title = "Life Expectancy vs GDP per Capita",
+ x = "GDP per Capita (log scale)",
+ y = "Life Expectancy",
+ color = "Continent"
+ ) +
+ theme_minimal()
>
> #Pie chart
> gapinder %>%
+ filter(year == 2007) %>%
+ group_by(continent) %>%
+ summarise(total_population = sum(population, na.rm = TRUE)) %>%
+ ggplot(aes(x = "", y = total_population, fill = continent)) +
+ geom_bar(stat = "identity", width = 1) +
+ coord_polar("y") +
+ labs(
+ title = "Population Distribution by continent (2007)",
+ fill = "Continent"
+ ) +
+ theme_void()
>
> #High-Low chart
> gapinder %>%
+ group_by(continent) %>%
+ summarise(
+ min_life = min(life_exp, na.rm = TRUE),
+ max_life = max(life_exp, na.rm = TRUE)
+ ) %>%
+ ggplot(aes(
+ x = continent,
+ ymin = min_life,
+ ymax = max_life
+ ))
```



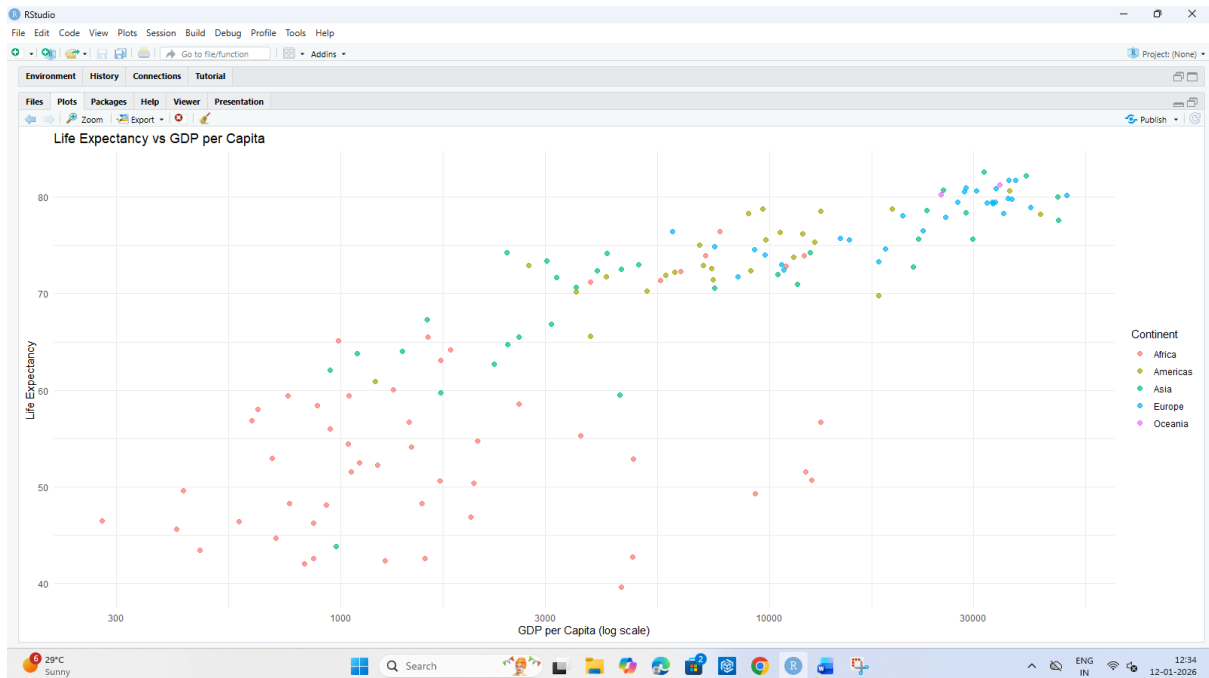
```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins Project: (None)

Source
Console Terminal Background Jobs
R - R4.5.1 - ~/ -
+ x = "GDP per capita (log scale)",
+ y = "Life Expectancy",
+ color = "Continent"
+ ) +
+ theme_minimal()
>
> #Pie chart
> gapinder %>%
+ filter(year == 2007) %>%
+ group_by(continent) %>%
+ summarise(total_population = sum(population, na.rm = TRUE)) %>%
+ ggplot(aes(x = "", y = total_population, fill = continent)) +
+ geom_bar(stat = "identity", width = 1) +
+ coord_polar("y") +
+ labs(
+ title = "Population Distribution by continent (2007)",
+ fill = "Continent"
+ ) +
+ theme_void()
>
> #High-Low Chart
> gapinder %>%
+ group_by(continent) %>%
+ summarise(
+ min_life = min(life_exp, na.rm = TRUE),
+ max_life = max(life_exp, na.rm = TRUE)
+ ) %>%
+ ggplot(aes(
+ x = continent,
+ ymin = min_life,
+ ymax = max_life
+ )) +
+ geom_linerange(size = 2, color = "steelblue") +
+ geom_point(aes(y = min_life, color = "red", size = 3) +
+ geom_point(aes(y = max_life, color = "darkgreen", size = 3) +
+ labs(
+ title = "High-Low chart of Life Expectancy by continent",
+ x = "Continent",
+ y = "Life Expectancy"
+ ) +
+ theme_minimal()
> |
```

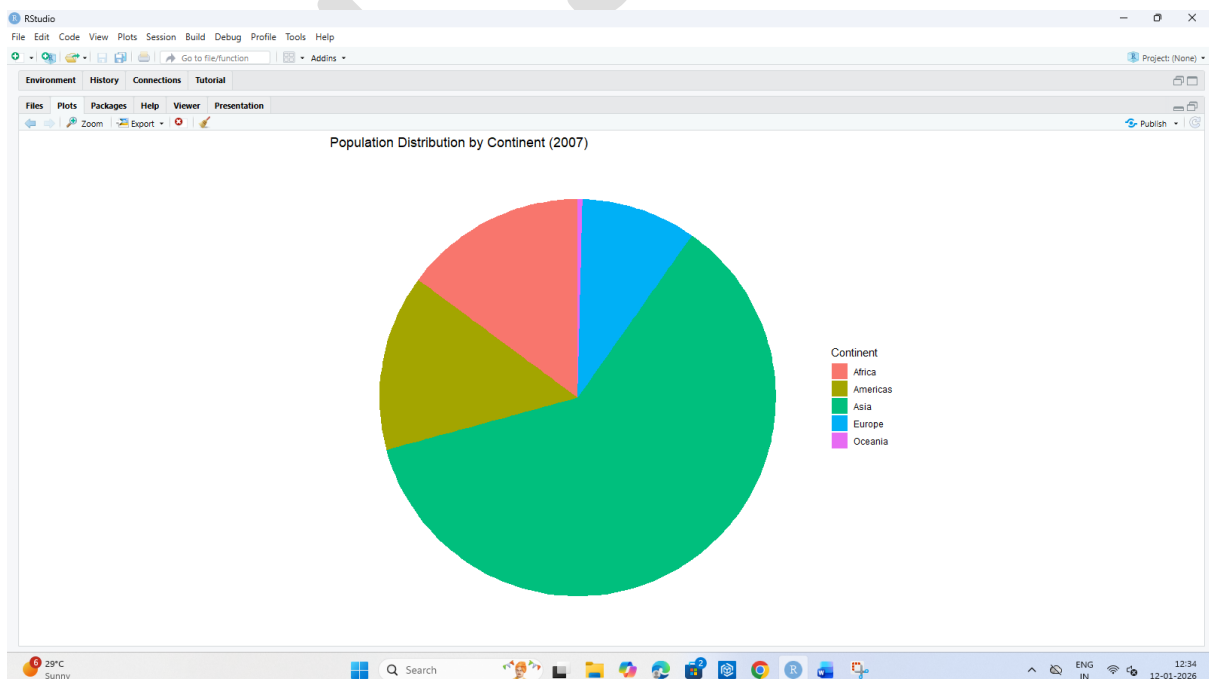
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### #Scatter Plot



### #PieChart



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### #High-Low Chart

